COMP103P App Project

“TermSeeker”

Group Report

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Developed by **Team 8** for UCL, Engineering Department.

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***Note: tables in Appendix are unspecified.

The report is fully written and edited by Daniil Gannota.

1. INTRODUCTION

1.1 Team

Overall, this project has helped us obtaining invaluable skills and developed further understanding of the computing world. We had been largely inexperienced programmers, and so spent significant time researching, understanding where things got wrong, changing the strategy and repeating everything again, *see Figure 1*.

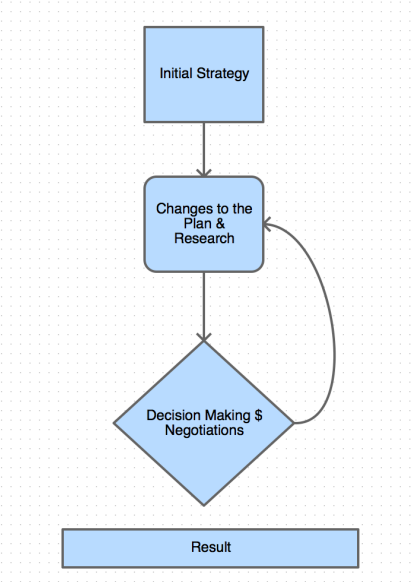


Figure 1: Development Cycle

Interesting, by doing just one project, we had to research so many areas. Although it might not be reflected in the final submission, the overall result, including googling and reading the most sophisticated methods, has been a personal success.

Daniil Gannota @ (tasks)

- documentation
- bi-weekly reports & the final report
- meetings & negotiation
- team management
- iOS development
- design amends
- Custom Search Engine implementation

Berat Cevik @ (tasks)

- documentation
- meetings
- first version Android development
- design amends
- video

To see more, go to Section 6.1.

1.2 Vision

The main purpose of the application is to provide a modified way to search for terminology. It adds refinements in language codes as well as gives a list of keywords that can be used to improve the final results.

Our team had a confused understanding of the project for the first time. This is due to similarities with the regular search. However, various meetings with our client and a person from IT-department helped clarifying the subtleties. Therefore, requirements, for instance MoSCoW, have been constantly amending throughout the project. If we discovered a

limitation or a computing difficulty, we immediately contacted the client, negotiated new terms and reflected this in the documentation.

1.3 First MoSCoW

This is the first version of MoSCoW list that has been confirmed by or client, including all the initial requirements:

- ✓ *stands for completed tasks*
- ❖ *stands for partially obtained*
- ○ *not finished*

MoSCoW

Must Have:

- ✓ Search for Terminology – *Google (or any other) search engine implemented into mobile application;*
- ✓ Up to 60 Languages – *allow user to choose language, consider words of the same spelling but different meaning;*
- ✓ Android/iOS Application
- ✓ Advanced Search – *example of Google's advanced search;*

Should Have:

- ✓ Star Ranking – *allow user to star rank sources from 1 to 5;*
- ❖ Filtering – *relevance by default, other options: date, meta-tagging, star-ranking;*
- ✓ User History – *save locally history of searches and rankings;*

Could Have:

- ○ Different Search Engines – *allow user an option to choose between search engines;*
- ✓ Share Option — *including emailing and other preferred social networks;*
- ○ Smart Results Appearing – *preferable source appears first depending on star ranking, unranked sources appear randomly so that the user can score them;*
- ✓ Meta-Tagging — *to be further discussed;*
- ✓ Sponsored Links — *must filtered out from the search, no advertisement;*
- ✓ Open Browser Window — *allow an option to open search in a browser window, to be further discussed;*

Won't Have:

- ✓ User Registration – *no log in / sign in, user history is saved locally on devise, star ranking to be further discussed with IT client;*
- ✓ In-App Purchases

Some of the ideas have been deleted/edited accordingly to the client choice. The MoSCoW presented is valid for this term only as the next will require further discussions.

Figure 2: MoSCoW (version 1)

NOTE: The point stating "Different Search Engine" can be counted as to be partially completed. There is no such option available in our application, as we were working with Google API only *(see in Section 4 of the report),* however, the client can always add additional websites to the search we implemented. This is done on the server side.

2. TEAM MANAGEMENT

2.1 Step by Step Guide

This is a guide we had confirmed with the client and had been following at the very start of the project:

Step by Step Guide
The report structure as follows: major implementation as a heading, following small iterations as steps numbered in order.
Search for words:
1. Use Java and either Objective C or Swift languages for platforms Android and iOS, respectively.
2. Implement Google into mobile application.
3. Add possibility to choose one language whilst having "English" set by default. This option affects google search that will be done, e.g. choosing English will mean search through google.co.uk, choosing Russian – google.ru.
4. Add table with the key words in .xml format (using parsing of data). This will add the key words you are providing with the diagram, which is an Excel file.
5. Add attributes. This will mean to use ('inurl: …' and such as this) google attributes in the search, ticked all on by default. Later implementation of Advanced mode will allow to tick off/on those attributes.
6. Add possibility to choose second language. There are a few questions to be asked about this particular option. Firstly, Star-Ranking requires database in order to have average score ordering of resources. At the same time, we will need to research the way Google results can be affected by our Star-Ranking system. Secondly, later iteration of Star-Ranking system will mean that users may view the application in a different way: for example, affecting the most popular websites that the application WILL display and YOU WANT it to display. Basically, the application may evolve in something completely different, though this is just my opinion. However, this is not a part of "Must Have" step for now, so is later to be determined.
7. Deploy for IOS and Android – and test it. Might take some time, however, to eliminate some bugs and make search more stable.
Advanced Search mode:
1. Add possibility to choose attributes. As a part of our work, we are to research attributes that Google is having, choose most preferable in our opinion and confirm them with you. For instance, when a user inputs word 'medicine' – where is the search performed? Inside the url (domain) of website? Or inside their texts? That is what is referred as 'google attributes'.

2.2 Distribution of Tasks

Section 1.1 shows a brief overview of the work each member in our team have been doing. More detailed explanation is added at Section 2.3.

2.2.1 Research

At the very start of the project, our team was researching the requirements from the original hand-out. The whole app-development was some we had never done before, so it would be fair saying that the research was being done incorrectly. As from today, we now know where to start looking for information and services, we learnt a lot of methods and limitations they impose. It is also fair to say that we could be a lot more productive and have outstanding results if not the inefficient work that was occurring.

The first problem we were faced with was whether we had to program in Cordova language or choose something completely different. Thus, the first was all about learning that language while researching alternatives. As a result, our team had though it would be better programming for Android and iOS platform separately.

Switching to the new IDEs and languages, our team spent time obtaining the necessary skill to start programming. It took us shorter time to learn Android Studio, but developing for iOS made us learning Swift and Xcode. The second platform had taken quite a time to be able to commence the work; considering simultaneous Android development, report and documentation, constant requirements negotiations, changes in the overall application looking and feeling, presentations held for the client and various limitations that we were discovering.

As a result, the development for iOS was stopped at a certain moment when a new way of computing the application was found, see Section 4.

Lastly, constant researches about server databases, which we were eventually advised not to include, and Google Services were quite ineffective as our team had not known what websites to use, thus simply googling and finding irrelevant information.

2.2.2 Problems

At the end, we have a list of problems accumulated:

1) External database (would solve many issues)
    a) No filters
    b) No proper meta-tagging
    c) No top results
    d) No smart appearing
2) Google API (which we did not use in the best way)
    a) No analytical data observed
    b) No private connection

2.2.3 New Requirements

Alongside with constant switching between different approaches, our team had to change documentation accordingly. This involved various emails and meeting with the client, negotiations and a new research.

When we agreed over a modified requirement, our team immediately edited documentation accordingly. This process repeated a few time, making the starting point too long to take. Additionally, we could not avoid documentation as it would prove to be compulsory for proper project handling.

2.3 Software

Throughout the project we have been using different tools to improve team communication and overall work experience.

To start with, we added all the MoSCoW requirement to an application service called Todoist. It was used to keep tract of overall development as well as raise concerns over new performance issues or limitations. Appendix 6.1 will have some of the screenshots from the server.

Furthermore, we used GitHub in order to work simultaneously on the same project. Appendix 6.3 shows some screenshots from the repository. It is worth saying that git does not work properly with large projects such as Android development. Therefore, it was almost always the case for manual application update.

3. DEVELOPMENT

3.1 Technical Requirements

As outlined earlier above, before starting this app project, neither of us had any experience in mobile app-development, and we decide to program for two platforms separately due to conveniences each IDE provides.

After we had confirmed the general procedure of app-development with the client, we started developing technical documentation that was meant to organise the structure of our application as well as enabling team work.

NOTE: Some of this was added to the bi-weekly reports, however, current report illustrates the most recent version. Moreover, these requirements were mostly developed for 'TermSeeker with External Browser' version, not the 'TermSeeker with CSE'.

3.1.1 Use cases

Use Case: Basic Search
ID: 1
Brief Description: The user can do basic search.
Primary Actor: User
Secondary Actor: None
Preconditions: Internet Connection
Main Flow: 1. The user selects one or two language(s) for the search. 2. The user types the words in the search tab. 3. The user selects a keyword group. 4. The user makes basic search. 5. If the user chose one language, the results in the specified language would be shown. 6. If the user chose two languages, the results which have a content in both of the specified languages would be shown.
Post Conditions: None
Alternative Flow: If the user does not specifies a language, it will be set to English by default.

Use Case: Advanced Search
ID: 2
Brief Description: The user can do advanced search by specifying some words.
Primary Actor: User
Secondary Actor: None
Preconditions: Internet Connection
Main Flow: 1. The user selects one or two language(s) for the search. 2. The user taps on the advanced search. 3. The user types the words in the advanced search tabs such as "all these words", "this exact word or phrase", "any of these words" and "none of these words". 4. The user makes advanced search. 5. If the user chose one language, the results in the specified language would be shown.

6. If the user chose two languages, the results which have a content in both of the specified languages would be shown.
Post Conditions: None
Alternative Flow: If the user does not specifies a language it will be set to English and by default.

Use Case: Language Selection
ID: 3
Brief Description: The user can choose one or two languages among language selections.
Primary Actor: User
Secondary Actor: None
Preconditions: None
Main Flow: 1. The user selects one or two language(s) for the search. 2. The user makes a basic or advanced search.
Post Conditions: Keep the language selection(s) until the user closes the app.
Alternative Flow: If the user does not specifies a language, it will be set to English by default.

Use Case: My Rating
ID: 4
Brief Description: The user can change the rating of the results or remove them.
Primary Actor: User
Secondary Actor: None
Preconditions: Internet Connection
Main Flow: 1. The user makes a basic or advanced search. 2. The user goes to the website that he/she selects. 3. When the user is done, he/she can rate the search from 1 to 5 on user history screen. 4. The user can change a rating or remove it from my ratings screen. 5. The user can rate a search or he/she can choose not to give a rating. 6. The user goes back to home page.
Post Conditions: None
Alternative Flow: The user can delete the ratings by tapping on “Clear Ratings”.

Use Case: User History
ID: 5
Brief Description: The user can see his/her search history and can delete it.
Primary Actor: User
Secondary Actor: None
Preconditions: None
Main Flow: 1. The user taps on “User History”. 2. The user selects a search that he/she has made. 3. The user can also rate this search. 4. The user goes to the selected website. 5. When the user is done, he/she goes back to user history page. 6. The user goes back to home page.
Post Conditions: None
Alternative Flow: The user can delete the user history by tapping on “Clear History”.

Use Case: Settings
ID: 6
Brief Description: The user can set his/her default language.
Primary Actor: User
Secondary Actor: None
Preconditions: None
Main Flow: 1. The user taps on “Settings”. 2. The user selects default language. 3. The user goes back to home page.
Post Conditions: The user’s preferences will be saved.
Alternative Flow: None

3.1.2 User Scenarios

Basic Search Scenario

1. Users opens the app.
2. User selects Language 1 and Language 2 as languages.
3. User types input in the search field.
4. User selects one of three categories of keyword groups.
5. User performs basic search.
6. The results are shown in a separate browser.
7. User taps one of the links.
8. When the user is done with the website, return back to the application.
9. User goes to user history.
10. User is able to rate a result.
11. User goes to my ratings.
12. User is able to send ratings to all possible social networks.
13. The user goes back to home page.

Advanced Search Scenario

1. User opens the app.
2. User taps on “Advanced Search”.
3. User selects Language 1 and Language 2 as languages.
4. User types input in the “all these words” tab.
5. User types input in the “any of these words” tab.
6. User types input and in the “none of these words” tab.
7. User performs advanced search.
8. The results are shown in a separate browser.
9. User taps one of the links.
10. When the user is done with the website, return back to the application.
11. User goes to user history.
10. User is able to rate a result.
11. User goes to my ratings.
12. User is able to send ratings to all possible social networks.
13. The user goes back to home page.

User History, Ratings and Settings Scenario

1. User opens the app.

2. User goes to “Settings”.
3. User sets default Language 1.
4. User goes back to home page.
5. User goes to “User History”.
6. User taps on the most recent website that were visited.
7. When the user is done with the website, return back to the application.
8. User deletes selected results by long tapping.
9. User deletes all the results by clicking a separate ‘Delete’ button.
10. The user goes back to home page
11. User goes taps and rates search results.
5. User goes to “Ratings”.
6. User taps on the most recently rated result.
7. When the user is done with the website, return back to the application.
8. User deletes selected results by long tapping.
9. User deletes all the results by clicking a separate ‘Delete’ button.
10. The user goes back to home page.

3.1.3 Class Diagram

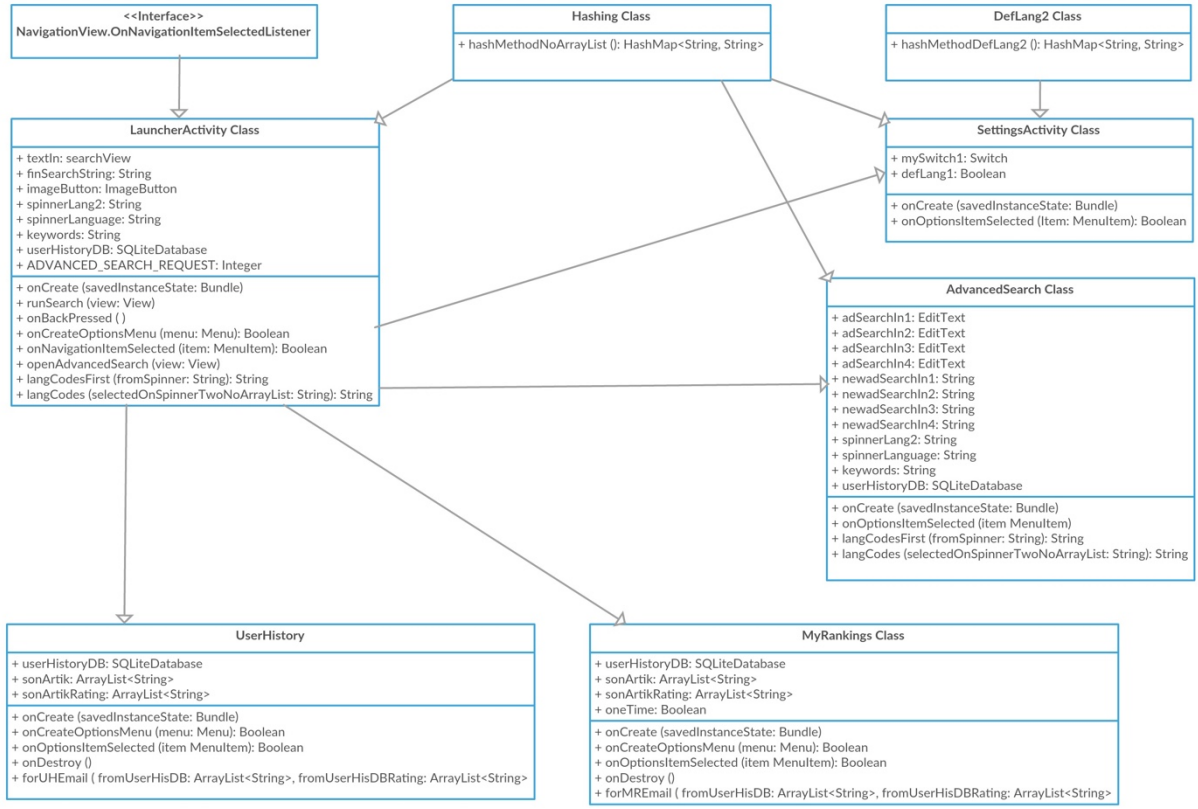


Figure 3: Class Diagram

3.2 Android Version

After confirming the “Step by Step” guide and UI draft with the client as well as writing the necessary documentation, we conducted a research about Android Studio. This helped the whole team to switch to Android development at any stage if urgently needed so. Our primal resource was a tutorial from Lynda.com. As new versions of Android Studio were released,

for instance there was a large update from 1.5 to 2.0, we spent time checking functionality they had brought to ensure safe and stable version of the final application.

NOTE: as a matter of fact, not all updates for Android Studio smoothly adapted to our code. Some of them required for a re-build of the Gradle file, others just a few little changes to the functions. However, one of the recent versions, 2.0 and then 2.1, had some issues with WebView functionality which caused unexpected crashes. Sequentially, our team had to re-write certain aspects as to ensure the application is stable even while the bugs are not fixed by Google itself.

3.2.1 Must Have

As a matter of priority, we decided to start the development with "Must Have" requirements from our "MoSCoW" list. Additionally, throughout the development process we largely benefited from other documentation as well as the managerial tools described earlier as all of it allowed cohesive team work.

3.2.1.1 Graphical Interface

As we had confirmed the graphical interface with our client, the first programming step was to use the templates that Android Studio includes to build standard activity pages. This is the original design pattern that was confirmed, *see Figure 3*.

Afterwards, we changed the colour of the theme to blue tones, regarding the meeting we had held with our client and his team. Additionally, we added a navigation drawer to enhance the user experience with menu items "User History", "My Ratings" and "Settings". We also added keywords for both languages on the main screen, since keywords are a distinctive feature of this application.

Figure 4: Interface Draft

3.2.1.2 Progress

In terms of other requirements, we needed to implement basic Google Search, Google Advanced Search both with 64 languages option. These 64 languages were provided by our client in an Excel file. We spent quite a long time on reading Excel files through the application by parsing the data to it; however, as our team could not resolve this issue, we decided to copy and paste these languages in an internal xml file. The downside of this is that it occupies a little more storage than the usual Excel file, see Section 6.5.

Another difficulty we had was about displaying the languages, i.e. linking two spinner items so that the languages in the second spinner depended on the language selection of the primal. For instance, if user selects Chinese in the first spinner item, then all the language names in the secondary spinner will be displayed in Chinese.

In order to achieve that, after some research on Java, we decided that the best way to implement this was to use a hash map. This helped us to manage the language codes and the language names easily. We defined this hash map in a separate class. Additionally, we defined certain functions to manage this hash map using them for keywords section as well.

The search results were supposed to be shown in a WebView inside the app, however, we could not implement this at the beginning. Therefore, we used an external browser support instead to implement basic and advanced searches.

For Google Advanced Search, we created a separate activity. In order to implement Google Advanced Search effectively, we performed certain experiments with Google Advanced search to understand the principle behind it. Afterwards, we added this functionality inside the advanced search activity class.

Later, we managed to create a Google Custom Search Engine through which users are able to have results of the input inside the application as our client requested.

3.2.2.3 Templates

When creating the graphical user interface of the app, we used interface items provided by Android Studio. Apart from that, we did not use any prepared templates or design patterns. Additionally, we created our own design considering clients' requirements as well as confirming it.

3.2.2.4 Browser Search

In order to implement input searching in a browser, we researched how Google uses URL to affect the search results; and by manipulating the URL that we pass to the external browser, we allowed users to make both basic and advanced search through the application. Moreover, our team benefited from this URL manipulation later, when we started using a web view to display the search results.

3.2.2.5 Limitations

The major limitation was that we did not add support of inside-application results search. Therefore, we could not actually add preferable filters or refinements that had been originally required. This was discussed with the client, changing corresponding work planning accordingly.

3.2.2.6 Debugging

This process was including debugging by the whole team, as well as searching for unresolved bugs. For example, while testing we noticed that if the user enters more than just one word in one of the advanced search bars, they would appear in Google Search as one word. The overall procedure took us about 3 days.

3.2.3 Should Have

As soon as we finished the "Must Have" requirements, we moved to "Should Have" which includes: star ranking system, filtering and user history. Filtering, however, was not added to

'TermSeeker with External Browser' version of the application. This is a problem followed from limitations of "Must Have" work.

For user history we decided to use Android SQLite database in order to store user's search history and star ratings. Therefore, this required our team to research and learn the bases of database prior to actual implementation. When the user makes a basic or an advanced search, the words and the keywords that they have searched for are sent to SQLite database. However, in the recent version we only stored input without the keywords. This is due to the fact that originally the idea was to give an option to choose from a large list of keywords. Afterwards, our client stated that he would like to have these keywords to be separated into three categories. Therefore, our original database started saving a long list of works along with the input. The best solution to this issue was to either completely change the database, or name the categories. However, as our client had not provided any instructions accordingly this problem, we decided to eliminate keywords from "User History" savings for the time being.

Users are able to delete one search input by long tapping on the item. A confirmation dialog will appear. Additionally, users are able to search an item again by tapping on it inside the "User History" page. Lastly, users are able to delete all of the searches by on a separate button at the top right on the same page.

As a distinctive feature of application as well as another "Should Have" requirement, we implemented star rating system which allowed users to rate their search results and see them on "Rating" screen. We added one more button to rate each item. The available ratings are from 1 to 5 stars. If user gives 0 rating to a search result, the application will assume that the user wills to delete the rating. Therefore 0 score corresponds deleting an item from star ranking page.

Furthermore, we used SQLite Database to store the ratings too. Every search input is stored with a unique score, which is 0 by default. And as users change the score, the inputs will be appearing/disappearing on the corresponding page.

3.2.3.1 Limitations

As we stated earlier above, filtering option was not added to the browser searching. Moreover, we were supposed to collect star ratings from users after they have visited a URL. However, it was not possible for us to implement such feature as due to the same reasons concerning filters. Although we made a quite comprehensive research about that point, we were unable to implement it due to its complexity and personal inexperience. However, we manage to implement WebView as a result of this research.

Furthermore, we were supposed to use a remote database to store star rankings so that once one user ranked a source, all of the other could see the average rating. This would be managed as a database on an external server. Our team was advised not to use this feature as due to the amount of work it required. Additionally, we contacted UCL department and talked to other advisors, and all told to negotiate a different functionality. Thus, our team acted accordingly, amending the requirements.

3.2.3.2 Debugging

Debugging phase for “Should Have” requirements was very challenging. We spent a lot of time on Google’s Developer website to find the best features and solutions to implement in our app. This was also considering server databases research.

Furthermore, we have two versions of our application to correspond to different tasks. This point will be further evaluated in Section 4. The reason we did not merge the two solutions into one application is that they use quite different techniques, and therefore had required major changes for complementary activities, such as user history. Hence, this would in some way overwrite the whole code patterns. Our team specifically asks to check both versions for better assessment.

3.2.4 Could Have

Since we had finished developing most of “Must Have” and “Should Have” requirements, for the rest of the time we tried to implement as many “Could Have” requirements as possible. You can check the whole list of completed and not tasks in the MoSCoW section on page 5.

Thus, we implemented email option which allows users to send their user history and ratings via any social utility. When users tap on the email icon at the top of user history and my ratings pages, the application asks them to choose the preferable option from various available. When the user chooses one of options, the data is passed along with the ratings in parentheses. This feature improves apps interaction with humans.

As an additional function we added settings activity to let the users to set a primary default language, so that this will appear the same every time the application launches. We also tried to add this feature to select a default language for the secondary option, but when we added it our client explicitly asked to remove it. This was due to the fact that secondary language filed must start with “no language selected” option. However, we spent a lot of time configuring the second spinner, as it is linked to the first; i.e. if the default for Language 1 was changed, Language 2 was automatically translated into the new language.

As a matter of fact, we were initially using default settings activity class provided by Android Studio. However, we quickly decided to create our own activity class in order to optimise the code by getting rid of the trivial methods Android Studio’s settings activity is using. As ‘shared preferences’ is the most preferable way of implementing settings, we needed to conduct some research about it. Afterwards, we succeeded in our final result.

3.2.4.1 Debugging & Limitations

Skipping a separate “Limitations” section due to “Could Have” list of queries remaining largely incomplete, we tested the final application on different Android devices as well as used various emulators available. We discovered a performance issue: on the devices with lower specifications the application takes a few seconds on the very first launch to create the necessary database. The solution would be to use background activity, which was not implemented due to time constrains.

3.3 iOS Version

This version of our application has not been submitted as we abundant the development at a stage when it was too unstable having only basic features while Android version required extra support due to its own limitations' problems.

3.3.1 Learning

Our team spent time learning Swift language. Now we know that Xcode supports C too, but not back then. Therefore, an amount of time was certainly wasted if thinking about final result, however, provided invaluable experience. We now know Swift!

Our next step after learning Swift was to learn Apple's IDE – Xcode. This took a little while as it differs in some subtle ways from what Android Studio allows.

Overall, learning period took longer than originally anticipated as due to urgent problems concerning Android development. Constant switching as well as change of requirements had induced unstable application.

3.3.2 Ending

At the time when we had to decide whether to concentrate on Android platform or try to revive iOS, but this would have us presenting two applications with main features only.

This application was unstable due to three reasons:

1. Google Search
2. Database
3. Parsing Data

At that time, our team was negotiating different terms with the client about requirements. However, iOS application was originally structured in a way so that it implements the actual Google Search and renders the results in a specified format. However, we only discovered Google API services at the very end, leaving to a choice of implementing into either iOS or Android.

The other two factors, Database and Parsing, are closely linked as database was supposed to store some information parsed from Excel file, see Section 6.5. This was a challenging part, and the final result was working. The reason they could not exist, however is again linked to the Google API services. More about Google Services is in Section 4.

4. GOOGLE SEARCH

4.1 Search Engine

In order to access search results inside our application, we had to link Google Services with it. Therefore, our team used application programming interfaces (APIs) that Google provides for developers. This enables communication between any Google Service, such as Custom Search Engine which is using Google Search, in our case, and displays the necessary data in the specified format.

However, we have to admit that this implementation was the most challenging part of the project. Not only this took about a week, overall, to research, but is generally used on websites only. Hence, most of the tutorials explained how to add a JavaScript file to your webpage, and did not provide information about app-development. Thus, we tried to convert/link JavaScript code into/with our Java application, but this did not work properly. Likely, eventually, we found a way to add a direct connection to the application.

Generally, the way it works is that there are certain steps to be followed: creating a search engine, configuring it, enabling connection, modifying Android application and linking the processes. First of all, GoogleCould Platform provides Google APIs that can be created and configured. Secondly, we had to research different methods that are used to establish safe and protected communication between any device and one particular search engine. Lastly, we amended our application so that it connects to the service only when the user asked so, modifying user interface accordingly.

4.2 Connection

There are a few ways in which Custom Search is connected to Android or any other application. The simplest solution was to create a public server and open it inside the application using WebView library. Linking the Android application with the server required enabling of public server ID. This ID allows only users who know it to access the service. Therefore, we added it to the code, by passing ‘cx’ to URL of the engine, so that the connection occurs automatically.

Nevertheless, we have also tried to enable more sophisticated connection which would both protect our customers and display the data in the best mobile format.

4.2.1 Private Keys

The other way to establish communication between a device and a service would be to use a private key. The idea is that only users who obtained the key are able to access the servers. By comparison, public link can be used by anyone as long as the address is known whilst this method requires constant/at least one-time authorisation. To do so, we created ‘.keystore’ file as well as enabled the necessary login procedure on the Custom Search side. Overall, as

our application had the keystore file signed to it, only this program could be using the Custom Search Engine.

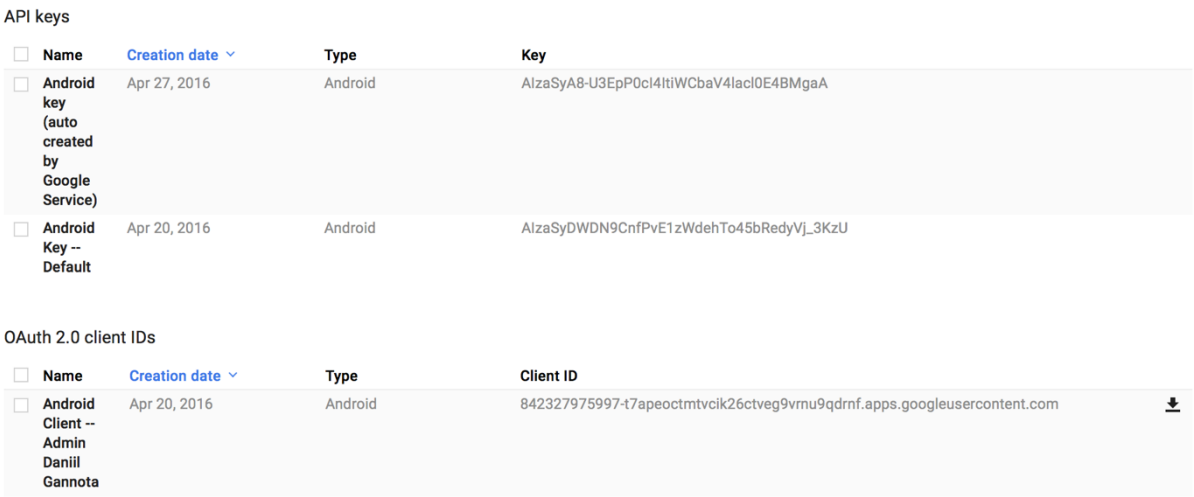


Figure 5: Example of Private Keys

We have been researching these procedures provided by Google, for instance, OAuth 2.0 authorisation. Additionally, there is another type of private connection – API keys. The main difference lies within conveniences of either checking the login details at the launch of application, or every time while loading response to new input.

Unfortunately, our team could not achieve decent private connection. One of the reasons is that we are completely new to this service, therefore all step performed are taken from programming blogs which can be inconsistent in explanations. Moreover, Google has just released quite an unstable update to Android Studio which slightly breaks WebView library. This is one of the reasons we could not test all solutions provided on the internet – any significant level of complication to WebView makes applications crash. As a result, private connection remained unresolved.

```
public class RestauranteUniversitarioActivity extends Activity {

@Override
public void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);
    WebView cardapio = (WebView)findViewById(R.id.web_engine);

    cardapio.getSettings().setJavaScriptEnabled(true);

    String data = "";

    Document doc = null;
    try {
    doc = Jsoup.connect("http://www.iguatu.ce.gov.br/").get();
    }
  catch (IOException e) {
    e.printStackTrace();
  }

    Elements content = doc.getElementsByClass("dest-left");
    if(content.size() > 0) {
      data = content.get(1).text();
    }
          cardapio.loadData(data, "text/html", "UTF-8");
}

}
```

Figure 6: Example WebView Code

4.2.2 Rendering

As a way to optimise web-version of the Custom Search Engine, we have been digging all over the internet to find a method which analyses pages and only renders what is explicitly specified.

The easiest solution was to use WebView and then '@Override' it with a specified 'div' section. Ideally, it only shows the part of webpage that is within the 'div'. However, in our case we had no 'ids', and instead had to specify 'class' of the 'div'. The key different is that 'ids' are unique while 'classes' can be of similar name which can

rend additional files. Moreover, webView.getElementsByClass('class') function receives an array of elements which must then be outputted singularly using a loop. It is worth noting that a lot of our research was based on this part, and unfortunately the discovery of this little limitation required long hours of testing and googling.

Eventually, we came with a better solution in which we are using Jsoup to parse only certain code to an array of elements, *see Figure* . The array is then converted into the necessary html format and loaded to the user. We specified all the necessary "try catch" exception throws for better debugging process. As a result, this did not work, supposedly, due to protection each web-page includes.

As our knowledge is limited, we have tried most, if not all, of the examples from the internet. Moreover, this rendering only works with AsyncTask, which enables background activity in the application, or IntentService; our team tried both of ways. The reason why Android requires background activity is due to loading time – it will crash the application if network loading may take too long potentially. Therefore, we even tried to modify Google's policy while testing the performance issues:

```
StrictMode.ThreadPolicy policy = new StrictMode.ThreadPolicy.Builder().permitAll().b

StrictMode.setThreadPolicy(policy);
```

Figure 7: Example of Policy Breaker

This coding part is rather to be avoided as it breaks all the protective limitations instructed by Google. However, we even tested this example to ensure that everything was used.

As a matter of fact, the last example helped us to go the furthest in the rendering process, although we were faced with the last and main issues – web-page protection. Most of the pages online do not allow to access just a specified part of the page. The error was either "Cannot call determinedVisibility()" or "java.io.FileNotFoundException". Bloggers suggested that the problem lies within private connection, which we could not implement as described in Section 4.2.1.

4.2.3 Instructions

In order to do the implementation without disturbing our client, we decided to register the search engine on one of our personal Google accounts. This means that the application will need to be re-connected to our client's account to have full control over the Custom Search Engine. Our team will have a voluntary meeting after UCL's deadline for the project, thus, the customer will be provided with the information about registering and linking services. Additionally, we will provide some advices about the platform and explain ways the output results can be formatted and improved, as well as the ways statistical data is collected about the users.

Furthermore, we will recommend Google Analysis Tool that records statistics about input, searches and rates – potentially, anything that is in the application. Therefore, our client will have an idea about how to use features we have implemented, for instance User Rating system, and improve application accordingly.

Last, there is a limited number of searches that can be done per day – 100. Any additional 1000 will cost around 5 dollars. Additionally, there is an option for paid version of Google Services which we have not tested and are unable to comment on.

4.3 Programming Methods

Google's CSE service provides with most of the utilities our client was asking for. However, there is one nuance – it's static and applies to all users. In our free version we could only specify 'keywords' or 'refinements' that once added will be displayed to all users, and therefore cannot be removed by them.

The purpose of the application is to provide customers with the choice of languages and keywords. They can have either one language selected, or both; it also allows to choose out of three categories of keywords. Thus, when the user selects primal language, it will add "site=.com" or "site=.ru" depending on the country – this is a parameter that filters only the links ending with specified country value. Choosing the secondary language will add a second "site=.smth" to the input, with 'OR' parameter allowing to have both countries in the search.

Keywords in our application work differently from what Google has in the CSE setup profile. As they only have static keywords, we found a way to add 'refinements' manually. This is done by passing the chosen keywords inside our application and allowing them to influence the top results. The both methods are performed by passing additional attributes to final url. For example, "gsc.q= " affects the input, while "gsc.ref=more " priorities the top results.

4.4 New Concept

In order to accommodate the new features coming from CSE, we had to largely modify the concept of the application. That is to say, in our submission we have provided you with two versions: one is using CSE, another just the browser.

Ideally, our team would like to combine these versions, allowing the user to pick ways in which results are displayed. However, they were not merged due to time constraints. We could easily add 'Browser' option inside of our CSE application, but our client has not confirmed this design solution. Therefore, we will send both file and ask whether one is enough, or they have to be single.

It is also meant to show different approaches. As we were not experienced enough to find the best solution at the very beginning, despite thorough documentations and various meeting, this resulted into some additional changes. Nevertheless, it is still a great experience for our team.

5. Meetings

Meeting Number: 1
Met with: Mark Shuttleworth (Client)
Meeting Duration: 1 hour approximately
Summary of the Meeting: Initiations. Discussion about the app. The meeting with the client gave an overview of the project. We also conducted the development path that our team will be following.

Meeting Number: 2
Met with: Pablo (IT co-worker) from Mark Shuttleworth's Team
Meeting Duration: 45 minutes
Summary of the Meeting: Initiations. Pablo clarified general application purpose as well as specified programming challenges, for example, we noticed that there are two ways in which a user can affect Google search: by choosing right key words, given by the client, and (or) by selecting advanced search attributes.

Meeting Number: 3
Met with: Mark Shuttleworth
Meeting Duration: 20 minutes
Summary of the Meeting: Discussion and evaluation of the meeting with Pablo. Discussions on the requirements considering the researches we had made. Clarification of "MoSCoW".

Meeting Number: 4
Met with: Mark Shuttleworth
Meeting Duration: 20 minutes
Summary of the Meeting: Clarification of certain points about app-development as well as design decisions. A few new features have been discovered, previously undescribed in “MoSCoW”.

Meeting Number: 5
Met with: Mark Shuttleworth and His Team
Meeting Duration: 1 hour 10 minutes
Summary of the Meeting: Initiations. Presentation about the current situation of the app, development process and development tools.

Meeting Number: 6
Met with: Mark Shuttleworth
Meeting Duration: 30 minutes
Summary of the Meeting: Initiations. Presentation about the current situation of the app, development process and development tools.

***Note: there was one more meeting which was a presentation of our current work for the students. It was a query from our client. See Section 6.3.

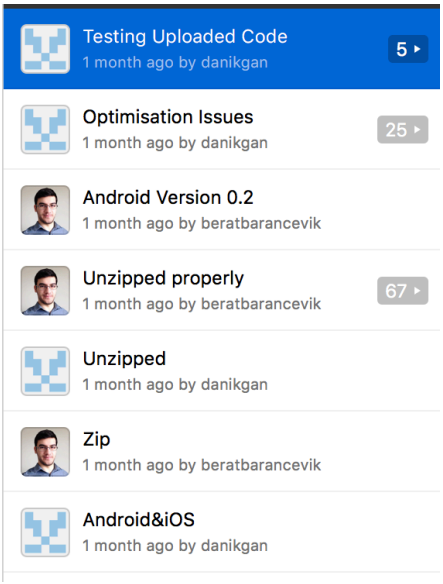
6. Appendix

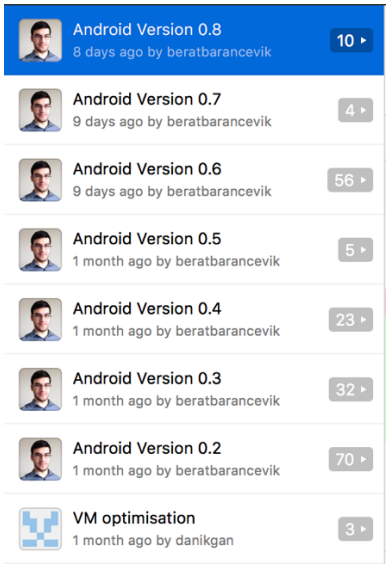
6.1 Todoist

Just a few screenshots of our team work from Todoist.

- ~~Link languages to all data~~
- ~~Add Google attributes~~
- ~~Add .xml file~~
- ~~Allow to choose keywords~~
- ~~Implement Google search~~
- ~~Enable Search Results inside the App~~
- ~~Android~~
- ~~Final classes diagram~~ 1
- ~~Report 3~~
- ~~User Scenarios~~
- ~~Use Cases~~
- ~~Pre-requirements~~
- ~~Corrections in Turkish Dictionary~~
- ~~Research Google Search~~
- ~~A brief description~~ 2
- ~~Draw sequential diagram and confirm it~~
- ~~Arrange a meeting with IT guy~~ 1
- ~~Report 2~~
- ~~Report 1~~
- ~~Write the bi-weekly report~~
- ~~Design concepts~~
- ~~Create Presentation Slides~~
- ~~Write first prototype in Java~~
- ~~Prototype User Interface~~
- ~~Draw design concepts (a few to choose?)~~
- ~~Confirm UI with the client~~
- ~~Draw UI sketch~~

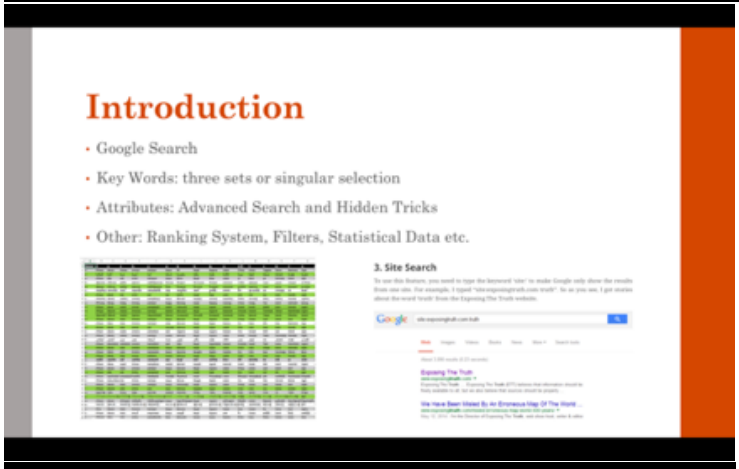
6.2 GitHub Repository

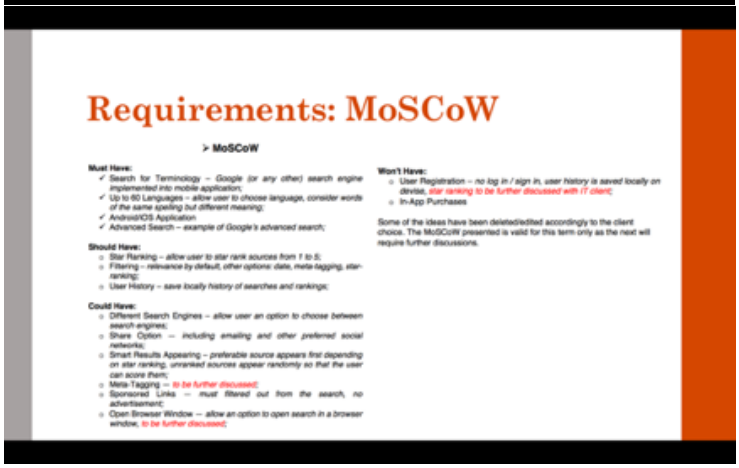


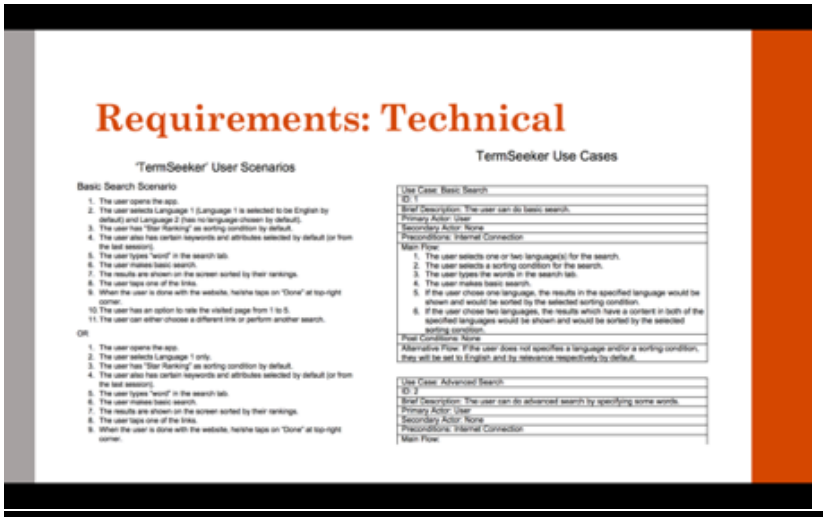


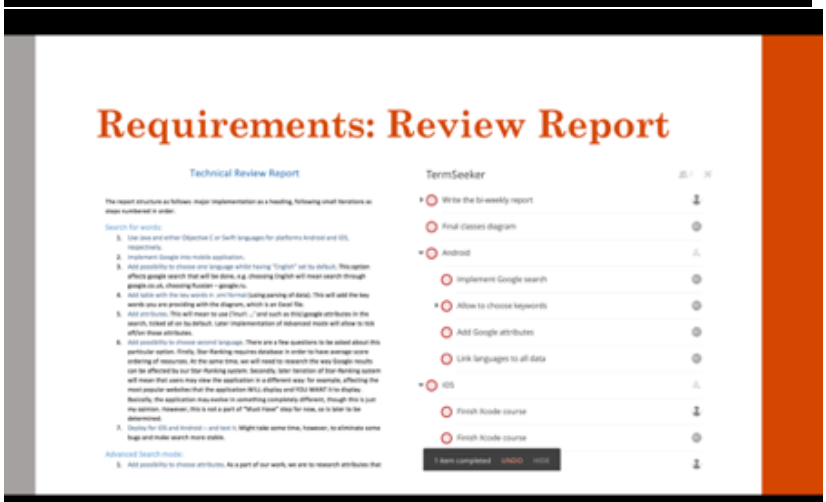
6.3 Presentation Slides

There was one more meeting which was a presentation of our current work for the students. It was a query from our client, we did voluntary work.






Requirements: Technical
'TermSeeker' User Scenarios
Basic Search Scenario
TermSeeker Use Cases


Requirements: Review Report
Technical Review Report
TermSeeker


Design Patterns: First Draft
Language 1
Language 2
Search..
Search Results
Key Words
Attributes
Key Set 1
Key Set 2
Key Set 3
All these words
This exact word or phrase
Any of these words
Search
User History
Settings

Scrum

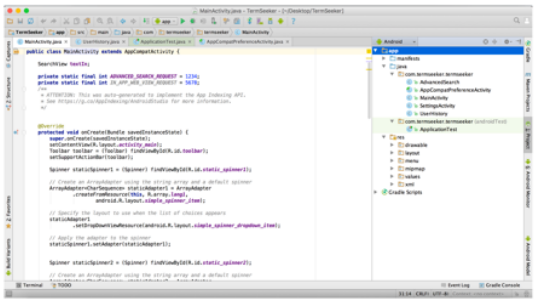
- – an Agile framework for completing complex projects

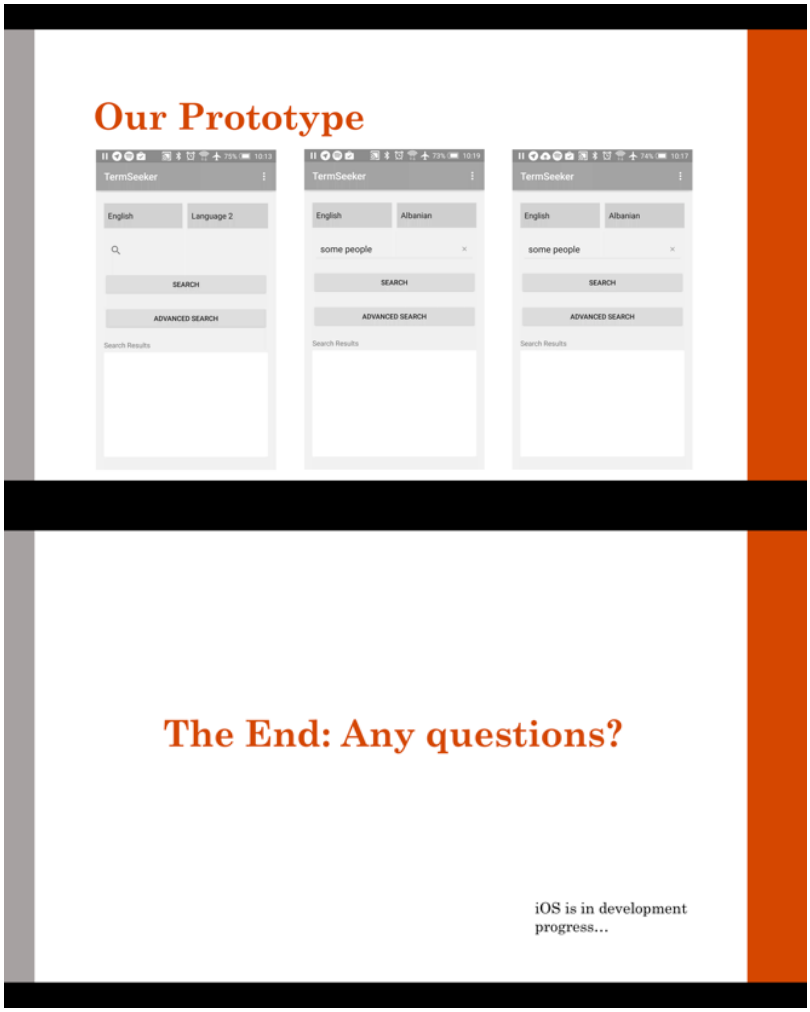
- Two different applications
- Star Ranking system as a Database
- And so on…

More Programming…

- We use two different language to compute: Swift (iOS) and Java (Android)
- Two different IDEs (Integrated Development Environments): Xcode and Android Studio
- Through requirements we can divide work and enter a project at almost any stage

Android Studio




Our Prototype
TermSeeker
English
Language 2
SEARCH
ADVANCED SEARCH
Search Results
TermSeeker
English
Albanian
some people
SEARCH
ADVANCED SEARCH
Search Results
TermSeeker
English
Albanian
some people
SEARCH
ADVANCED SEARCH
Search Results
The End: Any questions?
iOS is in development progress...

6.4 Logos

Here are the logos we draw for our client to choose from.

6.5 Excel file

Columna1	af	sq	ar	hy	az	eu	be	bn	bg	ca	zh-CN	hr	cs
af	Afrikaans	albanian	Arabiese	armenian	azerbaijani	basque	Wit	bengali	Bulgaarse	catalan	Chinese	croatian	Tsjeggiese
ar	أفريكانية	ألبانية	عربية	أرمينية	آذرية	باسكية	بيلاروسية	بنغالية	بلغارية	كتالانية	صينية	كرواتية	تشيكية
az	afrikaans	alban	ərəb	ermənі	Azərbaycan	basque	Belarus	Bengali	Bolqar	catalan	çin	Xorvat	çex
be	афрыкаанс	албанская	арабскі	армянскі	азербайджанская	баскская	беларускі	бенгальская	балгарскі	каталонскі	кітайскі	харвацкая	чэшскі
bg	африканс	албански	арабски	арменски	азербайджански	баски	беларуски	бенгалски	български	каталонски	китайски	хърватски	чешки
bn	আফ্রিকান্স	আলবেনিয়ান	আরবি	আর্মেনিয়ান	আজারবাইজানীয়	বাস্ক	বেলারুশিয়ান	বাঙালি	বুলগেরীয়	কাতালান	চীনা	ক্রোয়েশিয়ান	চেক
ca	africaans	albanès	àrab	armeni	àzeri	basc	bielorús	bengalí	búlgar	català	xinès	croat	txec
cs	afrikánština	albánský	arabština	arménský	ázerbájdžánský	basque	Běloruské	bengálský	bulharský	katalánština	čínština	chorvatský	čeština
cy	Affricaneg	Albaneg	Arabeg	Armeneg	azerbaijani	Basgeg	Belarwseg	bengali	Bwlgareg	Catalaneg	chinese	Croateg	Tsiec
da	afrikaans	albansk	arabisk	armensk	aserbajdsjansk	baskisk	hviderussisk	bengali	bulgarsk	catalansk	kinesisk	kroatisk	tjekkisk
de	Afrikaans	Albanisch	Arabisch	Armenisch	Azerbaijani	Baskisch	Belarussisch	Bengali	Bulgarisch	Katalanisch	Chinesisch	Kroatisch	Tschechisch
el	Αφρικανικά	Αλβανικά	Αραβικά	Αρμένικα	Αζερμπαϊτζάνικα	Βάσκικα	Λευκορωσικά	Μπενγκάλι	Βουλγαρικά	Καταλανικά	Κινέζικα	Κροατικά	Τσέχικα
en	Afrikaans	Albanian	Arabic	Armenian	Azerbaijani	Basque	Belarusian	Bengali	Bulgarian	Catalan	Chinese	Croatian	Czech
eo	afrikaans	Albana	Araba	Armenian	Azerbajani	eŭska	Belarusian	Bengali	Bulgara	Kataluna	ĉina	Kroata	ĉeĥa
es	africaans	albanés	árabe	armenio	azerí	vascuence	bielorruso	bengalí	búlgaro	catalán	chino	croata	checo
et	afrikaani	albaania	araabia	armeenia	aserbaidžaani	baski	Valgevene	bengali	bulgaaria	Katalaani	hiina	horvaadi	tšehhi
eu	afrikaans	albanian	arabiera	armenian	azerbaijani	euskara	belarusian	Bengali	bulgarian	catalan	txinako	Kroaziako	Txekiar
fa	آفریکانس	آلبانیایی	عربی	ارمنی	آذربایجان	باسک	بلاروس	بنگالی	بلغاری	کاتالان	چینی	کرواتی	چک
fi	afrikaans	albanialainen	arabialainen	armenian	Azerbaidžanin	baski	Valko	Bengali	bulgarialainen	katalaani	kiinalainen	kroaatti	Tšekin
fr	afrikaans	albanais	arabe	arménien	azerbaïdjanais	basque	biélorusse	bengali	bulgare	catalan	chinois	croate	tchèque
ga	afrikaans	Albáinis	arabic	Airméinis	Asarbaiseáinis	Bascais	Bealarúisis	Beangáilis	Bulgáiris	Catalóinis	Sínis	Cróitis	Seice
gl	afrikaans	albanés	árabe	armenio	azerbaiano	éuscaro	bielorruso	bengalí	búlgaro	catalán	chinés	croata	checo
hi	अफ्रीकी	अल्बानियन	अरबी	अर्मेनियाई	आज़रबाइजानी	बास्क	बेलारूसी	बंगाली	बल्गेरियाई	कैटलन	चीनी	क्रोएशियाई	चेक
hr	afrikaans	Albanac	arapski	Armenac	Azarbejdžanac	baskijski	Bjeloruski	bengalski	bugarski	katalonski	kineski	hrvatski	češki
ht	afrikaans	albanian	Arabic	armenian	azerbaijani	basque	belarusian	Bengali	bulgarian	catalan	Chinwa	croatian	czech
hu	afrikaans	albán	arab	örmény	azerbajdzsáni	baszk	fehérorosz	bengáli	bolgár	katalán	kínai	horvát	cseh
hy	afrikaans	ալբանական	արաբական	հայերեն	Ադրբեջանի	Բասկերի	Բելառուսի	bengali	Բուլղարիայի	catalan	Չինական	խորվաթիայի	չեխ
id	Afrikanas	bahasa Albania	Arab	Armenia	Azerbaijan	basque	Belarusia	Benggala	Bulgaria	catalan	Cina	Kroasia	Ceko
is	afrikaans	albanian	Arabic	armenian	azerbaijani	basque	Hvítrússneska	bengali	bulgarian	catalan	Chinese	croatian	czech
it	afrikaans	albanese	arabo	armeno	azero	basco	bielorusso	bengalese	bulgaro	catalano	cinese	croato	ceco
iw	אפריקאנס	אלבני	ערבית	ארמני	אזרבייג'אן	אוזבקים	הבסקים	בלארוסית	בנגלית	בולגרי	קטלאנית	סינית	קרואטי	צ'כית
ja	アフリカーンス	アルバニア語	アラビア語	アルメニア語	アゼルバイジャン語	バスク	ベラルーシ語	ベンガル語	ブルガリア語	カタロニア語	中国語	クロアチア語	チェコ語
ka	afrikaans	albanian	არაბული	სომხური	აზერბაიჯანული	basque	ბელორუსული	Bengali	bulgarian	ქართული	ჩინური	croatian	ჩეხური
ko	아프리카	알바니아	아라비아 말	아르메니아 사람	아제르바이잔	바스크 사람	벨라루스어	벵골 사람	불가리아 사람	카탈로니아 사람	중국말	크로아티아의	체코 사람
la	Africa	Albanian	Arabic	Armenian	Azerbaijani	Basque	Belarusica	Bengali	Bulgarian	Catalan	Seres	Croatian	Res
lo	Afrikaans	Albanian	Arabic	ອາເມເນຍ	ອາເຊີໄບຈັນ	Basque	ເບລາຣຸດຊ໌	Bengali	Bulgarian	ພາສາ	ຈີນ	Croatian	ສາທິນ	
lt	afrikanso	albanų	arabų	armėnų	azerbaidžanietių	Baskų	Baltarusijos	bengalų	bulgarų	Katalonų	Kinijos	kroatų	Čekijos
lv	Afrikāņu	albāņu	arābu	armēņu	azerbaidžāņu	basku	Baltkrievijas	bengāļu	Bulgārijas	Katalāņu	ķīniešu	Horvātijas	čehu
mk	африканс	албански	арапски	ерменски	азербејџански	баскиски	Белоруски	бенгалски	бугарски	каталонски	кинески	хрватскиот	Чешка
ms	Afrikaans	Albania	Bahasa Arab	Armenia	Azerbaijan	Basque	Belarusian	Bengali	Bulgaria	Catalan	Cina	Croatian	Czech
mt	afrikaans	Albaniż	Għarbi	Armenjan	Ażerbajġan	Bask	Belarus	Bengali	Bulgaru	Katalan	Ċiniż	Kroat	Ċeka
nl	Afrikaans	Albanees	Arabisch	Armeens	Azerbeidzjaans	baskisch	belarusian	Bengalees	Bulgarian	Catalaanse	Chinese	Kroatisch	Tsjechisch
no	afrikaans	albansk	Arabic	armensk	aserbajdsjansk	basque	belarusian	bengali	bulgarian	catalan	kinesisk	Kroatisk	Czech
pl	afrikaans	albański	arabski	ormiański	azerbejdżański	baskijski	białoruski	bengalski	bułgarski	kataloński	chiński	chorwacki	czech
pt	afrikaans	albanês	árabe	arménio	azerbaijano	basco	língua-Bielorrussa	bengali	búlgaro	catalão	chinês	croata	checo
ro	afrikaans	albanez	arabic	armean	azeră	bască	Belarus	bengali	bulgar	catalan	chinez	croat	ceh
ru	африкаанс	албанский	арабский	армянский	азербайджанский	баскский	белорусский	бенгальский	болгарский	каталонский	китайский	хорватский	чешский
sk	afrikánčina	albánsky	Arabčina	arménsky	Azerbajdžanský	basque	Bieloruské	bengálčina	bulharčina	Katalánsky	čínan	chorvátsky	Čeština
sl	Afrikaans	albanščina	arabščina	armenski	azerbajdžanski	baskovščina	beloruščina	bengalščina	bolgarščina	katalonščina	kitajščina	hrvaščina	češčina
sq	Afrikaans	shqiptar	arab	armen	azerbajdzhanas	bask	bjellorusisht	Bengali	bullgare	Shqip	kinez	Kroatisht	çek
sr	африканс	албански	арапски	јерменски	азербејџански	баскијски	Белоруски	бенгалски	бугарски	каталонски	кинески	Хрватски	чешки
sv	afrikaans	albansk	arabiska	armenier	azerbajdzjanska	baskiska	vitryska	bengali	bulgarisk	katalansk	kinesisk	Kroatisk	tjeck
sw	kiafrikaans	Kialbeni	Kiarabu	Muarmeni	azerbaijani	basque	belarusian	bengali	bulgarian	Kikatalani	Kichina	croatian	czech
ta	ஆஃப்ரிகான்	albanian	அரபு	ஆர்மேனியன்	அசர்பாய்ஜானி	பஸ்க்	பைலோருஷ்ஷியன்	பல்கேரியன்	காடலான்	சீன	குரோஷியன்	செக்	
te	ఆఫ్రికాన్స్	albanian	అరబిక్	armenian	azerbaijani	బాస్క్	బెలరుషియన్	బెంగాలీ	బల్గేరియన్	catalan	చైనీస్	Croatian	చెక్
th	อัฟริกัน	แอลเบเนีย	ภาษาอาหรับ	อาร์เมเนีย	อาเซอร์ไบจัน	ชาวบอสค์	เบลารุส	ประเทศบังคลาเทศบัลแกเรีย	คาตาลัน	ชาวจีน	โครเอเชีย	สาธารณรัฐเช็ก	
tl	Aprikaans	Albanes	Arabe	Armenyo	Azerbaijani	Basko	belarusian	Bengali	Bulgarian	Katalan	Tsino	Kroatyano	Tsek	
tr	Afrika Dilleri	Arnavutça	Arapça	Ermenice	Azerice	Baskça	Belarusça	Bengalce	Bulgarca	Katalonca	Çince	Hırvatça	Çekce	
uk	африкаанс	албанська	арабська	вірменська	азербайджанська	баскська	білоруська	бенгальська	болгарська	каталонська	китайська	хорватська	чеська	
ur	ایفریکانز	البانی	عربی	ارمینی	آذربائیجان	باسکی	بیلاروسی	بنگالی	بلغاری	کاتالان	چینی	کرواتی	چیک	
vi	Afrikaans	Albania	tiếng Ả Rập	Armenia	Azerbaijan	Basque	Belarus	Bengali	Bulgaria	Catalan	Tiếng Trung	Croatia	Séc	
yi	אפריקאנס	אלבאנישן	אראבישן	ארמעניש	Azerbaijani	באסק	בעלארוסישן	בענגאלישן	בולגארישן	קאטאלאניש	כינעזיש	קראאטישן	טשעכיש	
zh-CN	南非荷兰语	阿尔巴尼亚语	阿拉伯语	亚美尼亚语	阿塞拜疆语	巴斯克语	白俄罗斯语	孟加拉语	保加利亚语	加泰罗尼亚语	中文	克罗地亚语	捷克语	
zh-TW	南非荷蘭語	阿爾巴尼亞語	阿拉伯語	亞美尼亞語	阿塞拜疆語	巴斯克語	白俄羅斯語	孟加拉語	保加利亞語	加泰羅尼亞語	中文	克羅地亞語	捷克語	

da	nl	en	eo	et	tl	fi	fr	gl	de	ka	el	ht	lw	hi	hu	is
Deense	Nederlands	Engels	Esperanto	estonian	filipino	Finse	Franse	Galisies	Duitse	georgian	Griekse	Haities Creole	Hebreeus	hindi	hungarian	Icelandic
Danimarka	holland	inglis	esperanto	eston	Filipino	fin	Fransiz	galician	alman	gürcü	yunan	haitian Creole	Hebrew	hindi	macar	Island
дански	холандски	английски	есперанто	естонски	филипински	фински	френски	галисийски	немски	грузински	гръцки	хаитянски	иврит	хинди	унгарски	исландски
ডেনমার্কের	ডাচ	ইংরেজি	এস্পেরান্তো	এস্তোনীয়	ফিলিপিনো	ফিনিশ	ফরাসি	গ্যালিসিয়	জার্মান	জর্জিয়ান	গ্রিক	হাইতিয়ান ক্রেওল	ইহুদি	হিন্দি	হাঙ্গেরীয়	আইসল্যান্ডীয়
danès	holandès	anglès	esperanto	estonià	filipí	Finès	francès	gallec	alemany	georgià	grec	crioll haitià	hebreu	hindi	hongarès	islandès
dánština	holandský	angličtina	esperanto	estonština	filipino	finský	francouzština	galicijský	Němec	gruzínský	řecký	Haitská kreolština	hebrejština	hindština	maďarský	islandský
danish	Isleldiroedd	Saesneg	Esperanto	Estoneg	Tagalog	Ffindir	Ffrangeg	galician	Almaeneg	georgian	Groeg	Creole haitian	Hebraeg	hindi	Hwngareg	Islandeg
dansk	hollandsk	engelsk	esperanto	estisk	filippinsk	finsk	fransk	galisk	tysk	georgisk	græsk	haitisk	hebraisk	hindi	ungarsk	Islandsk
Dänisch	Niederländisch	Englisch	Esperanto	Estnisch	Filipino	Finnisch	Französisch	Galizisch	Deutsch	Georgisch	Griechisch	Haitianisch	Hebräisch	Hindi	Ungarisch	Isländisch
Δανικά	Ολλανδικά	Αγγλικά	Εσπεράντο	Εσθονικά	Φιλιππινικά	Φινλανδικά	Γαλλικά	Γαλικιανά	Γερμανικά	Γεωργιανά	Ελληνικά	Κρεολικά Αϊτής	Εβραϊκά	Χίντι	Ουγγρικά	Ισλανδικά
Danish	Dutch	English	Esperanto	Estonian	Filipino	Finnish	French	Galician	German	Georgian	Greek	Haitian Creole	Hebrew	Hindi	Hungarian	Icelandic
Dana	Nederlanda	Angla	Esperanton	Estona	Filipino	Finna	Franca	Galegoj	germanaj	Georgian	grekaj	haitia kreola	Hebrea	hindi	Hungara	Islanda
danés	holandés	inglés	esperanto	estonio	Filipino	finlandés	francés	gallego	alemán	georgiano	griego	criollo haitiano	hebreo	hindi	húngaro	islandés
taani	hollandi	inglise	Esperanto	eesti	filipino	soome	prantsuse	Galitsia	saksa	gruusia	kreeka	Haiti kreooli	heebrea	hindi	ungari	islandi
Danimarkako	Holandso	English	esperantoa	estonian	filipino	Finlandiako	French	Galiziako	Alemaniako	georgian	Greziako	haitian Creole	Hebrew	hindi	hungarian	Icelandic
ডানমার্ক	হল্যান্ড	ইংলিশ	এস্পেরান্তো	এস্তোনিয়ান	ফিলিপিনো	ফিনল্যান্ড	ফ্রান্সে	গ্যালিসিয়	জার্মান	জর্জিয়ান	গ্রীক	হাইতীয়	ক্রেওল	হিব্রু	হিন্দি	হাঙ্গেরিয়ান	আইসল্যান্ডিক
tanska	hollantilainen	englanti	Esperanto	virolainen	filippiinilainen	suomi	ranska	galician	Saksan kieli	georgialainen	kreikka	Haitin kreoli	heprealainen	hindi	Unkarin kieli	islanti	lainen
danois	néerlandais	anglais	esperanto	estonien	philippin	finlandais	français	galicien	allemand	géorgien	grec	Créole haïtien	hébreu	hindi	hongrois	islandais
Danmhairgis	Ollainnis	Béarla	Esperanto	Eastóinis	Tagálaigis	Fionlainnis	Fraincis	Gailisis	Gearmáinis	Seoirsis	Gréigis	Creole haitian	Eabhrais	Hiondúis	Ungáiris	Íoslainnis
danés	holandés	inglés	esperanto	estoniano	filipino	finlandés	francés	galego	alemán	xeorxiano	grego	criollo haitiano	hebreo	hindi	húngaro	Islandés
डैनिश	डच	अंग्रेजी	एस्पेरांतो	एस्टोनियाई	फिलिपिनो	फ़िनिश	फ्रेंच	गैलिशियन	जर्मन	जॉर्जियाई	ग्रीनी	हैतियाई क्रेओल	यहूदी	हिंदी	हंगेरियन	आइसलैंडिक का
danski	nizozemski	Engleski	esperanto	estonski	filipinski	finski	francuski	galicijski	njemački	gruzijski	grčki	Haićanski kreolski	Hebrejski	hindski	Mađarski	islandski
danish	dutch	angle	Esperanto	estonian	filipino	finnish	franse	galician	Alman	georgian	greek	kreyòl ayisyen	Hebrew	hindi	hungarian	icelandic
dán	holland	angol	esperantó	észt	filippinó	finn	francia	galíciai	német	grúz	görög	haiti kreol	héber	hindi	magyar	izland
դանիերեն	հոլանդական	Անգլերեն	Էսպոնդիայի	filipino	ֆիններեն	galician	գերմաներեն	վրացական	հունական	Creole Haiti	եբրայերեն	հինդի	հունգարերեն	Հայերեն		
Denmark	Belanda	Inggris	Esperanto	Estonia	Filipina	Finlandia	Perancis	galician	jerman	Georgia	Yunani	Creole Haiti	Ibrani	Hindi	Hongaria	bahasa Islandia
Danska	dutch	English	esperanto	eistneska, eisti, eistneska	filipino	finnish	french	gallegska	þýska, þjóðverji, þýsku	georgian	greek	haitian creole	hebrew	hindi	ungverska	islenska
danese	olandese	inglese	esperanto	estone	filippino	finlandese	francese	galiziano	tedesco	georgiano	greco	creolo haitiano	ebraico	hindi	ungherese	islandese
ডেনমার্ক	হলান্ডীয়	ইংলিশ	এস্পেরান্তো	এস্তোনিয়ান	ফিলিপিনো	ফিনিশ	ফ্রেঞ্চ	গ্যালিসিয়ান	জার্মান	জর্জিয়ান	গ্রীক	হাইতিয়ান ক্রেওল	হিব্রু	হিন্দি	হাঙ্গেরিয়ান	আইসল্যান্ডিক
ντανσκ	ολλανδικά	αγγλικά	εσπεράντο	εσθονικά	φιλιππινέζικα	φινλανδικά	γαλλικά	γαλικιανά	γερμανικά	γεωργιανά	ελληνικά	κρεόλικα αϊτινά	εβραϊκά	χίντι	ουγγρικά	ισλανδικά
ดัตช์	อังกฤษ	ภาษาเอสเปอแรนโต	เอสโตเนีย	ฟิลิปปินส์	ฟินแลนด์	ฝรั่งเศส	กาลิเซียน	เยอรมัน	จอร์เจีย	กรีก	ครีโอล เฮติ	ภาษาฮีบรู	ฮินดี	ฮังการี	ไอซ์แลนด์	
dansk	hollandsk	engelsk	esperanto	estisk	filipino	finsk	fransk	galicisk	tysk	georgisk	græsk	haitisk Creole	hebraisk	hindi	ungarsk	islandsk
Danca	Flemenkçe	İngilizce	Esperanto	Estonca	Filipince	Fince	Fransızca	Galiçyaca	Almanca	Gürcüce	Yunanca	Haiti Creole Dili	İbranice	Hintçe	Macarca	İzlandaca
данська	голландська	англійська	есперанто	естонська	філіппінська	фінська	французька	галісійська	німецька	грузинська	грецька	гаїтянська креольська	іврит	хінді	угорська	ісландська
ڈینش	ڈچ	انگریزی	ایسپرانٹو	استونین	فلپائنی	فننش	فرانسیسی	گالیشیائی	جرمن	جارجی	یونانی	ہیٹی کریول	عبرانی	ہندی	انیس لینڈ کا باشندہ ہنگیرین	
Dan Mạch	Hà Lan	Anh	Esperanto	Estonia	Philippines	Phần Lan	ngườI Pháp	galician	Người Đức	Gruzia	người Hy Lạp	Creole Haiti	Hebrew	Tiếng Hin-ddi	Hungary	Iceland
דאניש	האלענדיש	ענגליש	עספּעראַנטאָ	עסטיש	פֿיליפּינאָ	פֿיניש	פֿראַנצייזיש	גאַליסיאַנישן	דייטש	גרוזינית	גריכיש	האיטיאַנער קרעאָל	העברעיש	הינדי	אונגעריש	איסלענדיש
丹麦语	荷兰语	英语	世界语	爱沙尼亚语	菲律宾语	芬兰语	法语	加利西亚语	德语	格鲁吉亚语	希腊语	海地克里奥尔语	希伯来语	北印度语	匈牙利语	冰岛语
丹麥語	荷蘭語	英語	世界語	愛沙尼亞語	菲律賓語	芬蘭語	法語	加利西亞語	德語	格魯吉亞語	希臘語	海地克里奧爾語	希伯來語	北印度語	匈牙利語	冰島語

id	ga	it	ja	ko	lo	la	lv	lt	mk	ms	mt	no	fa	pl	pt	ro
Indonesiese	Ierse	Italiaanse	japanese	Koreaanse	Lao	Latyns-	latvian	lithuanian	macedonian	malay	maltese	Noorse	Persiese	Pools	Portugees	romanian
أندونيسية	أيرلندية	إيطالية	يابانية	كورية	لاو	لاتينية	لاتفية	لتوانية	مقدونية	ملايو	مالطية	نرويجية	فارسية	بولندية	برتغالية	رومانية
indoneziya	irland	italyan	yapon	Koreya	Lao	latın	Latviya	litva	macedonian	malay	maltese	norveç	fars	polish	portuqal	rumın
інданезійская	ірландская	італьянскі	японскі	карэйская	лао	лацінская	латышская	літоўскі	македонскай	малайская	мальтыйская	нарвежская	фарсі	польскі	партугальская	румынская
индонезийски	ирландски	италиански	японски	корейски	лаоски	латински	латвийски	литовски	македонски	малайски	малтийски	норвежки	персийски	полски	португалски	румънски
ইন্দোনেশিয়াসম্বন্ধীয়	আইরিশ	ইটালিয়ান	জাপানি	কোরিয়ান	লাও	ল্যাটিন	লাত্ভীয়	লিথুয়ানিয়ান	ম্যাসেডোনীয়	মালে	মল্টিয়	নরওয়েজিয়ান	পারসিক	পোলিশ	পর্তুগীজ	রোমানিয়ান
indonesi	irlandès	italià	japonès	coreà	laosià	llatí	letó	lituà	macedoni	malai	maltès	noruec	persa	polonès	portuguès	romanès
indonéština	irština	italština	japonský	korejština	Lao	latinský	lotyšský	litevský	makedonský	malajský	maltština	norský	Peršan	polština	portugalština	rumunština
indonesian	Gwyddeleg	Eidaleg	Siapan	Corea	Lao	Lladin	Latfieg	Lithwaneg	macedonian	malay	maltese	norwegian	Persian	Pwyleg	Portiwgaleg	Rwmaneg
Indonesisk	irsk	italiensk	japansk	koreansk	lao	latin	lettisk	litauisk	makedonsk	malajisk	maltesisk	norsk	persisk	polsk	portugisisk	rumænsk
Indonesisch	Irisch	Italienisch	Japanisch	Koreanisch	Lao	Latein	Lettisch	Litauisch	Mazedonisch	Malaiisch	Maltesisch	Norwegisch	Persisch	Polnisch	Portugiesisch	Rumänisch
Ινδονησιακά	Ιρλανδικά	Ιταλικά	Ιαπωνικά	Κορεατικά	Λάος	Λατινικά	Λετονικά	Λιθουανικά	Μακεδονικά	Μαλαισιακά	Μαλτεζικά	Νορβηγικά	Περσικά	Πολωνικά	Πορτογαλικά	Ρουμανικά
Indonesian	Irish	Italian	Japanese	Korean	Lao	Latin	Latvian	Lithuanian	Macedonian	Malay	Maltese	Norwegian	Persian	Polish	Portuguese	Romanian
indoneziaj	Irlanda	itala	japanoj	Korea	Lao	latina	Latvia	Litova	Macedonian	malaja	Malta	Norvega	persaj	polaj	Portugala	Rumana
indonesio	irlandés	italiano	japonés	coreano	Lao	latín	letón	lituano	macedonio	malayo	maltés	noruego	persa	polaco	portugués	rumano
indoneesia	iiri	itaalia	jaapani	korea	Lao	ladina	läti	leedu	makedoonia	malai	Malta	norra	pärsia	poola	portugali	rumeenia
indonesian	irish	italian	Japoniar	korean	Lao	latin	Letoniako	lituaniera	macedonian	malay	maltese	Norvegiako	Persian	Poloniako	Portugalera	errumaniera
اندونزی	ایرلندی	ایتالیایی	ژاپنی	کره ای	لائوس	لاتین	لتونی	لیتوانیایی	مقدونی	مالایا	اهل مالت	نروژی	فارسی	لهستانی	پرتغالی	رومانیایی
indonesialainen	irlantilainen	italialainen	japani	Korealainen	Lao	Latina	latvialainen	liettualainen	Makedonia	malaiji	maltalainen	Norja	persialainen	puola	Portugalin kieli	romanialainen
indonésien	irlandais	italien	japonais	coréen	laotien	latin	letton	lituanien	macédonien	malais	maltais	norvégien	persan	polonais	portugais	roumain
Indinéisis	Gaeilge	italian	Seapáinis	Cóiréis	lao	Laidin	Laitvis	Liotuáinis	Macadóinis	Malaeis	Máltais	norwegian	Peirsis	polish	Portaingéilis	Rómáinis
indonesio	irlandés	italiano	xaponés	coreano	lao	latino	letón	lituano	macedonio	malaio	maltés	noruegués	persa	polaco	portugués	romanés
इंडोनेशियाई	आयरिश	इतालवी	जापानी	कोरियाई	लाओ	लैटिन	लात्वीयावासी	लिथुआनियाई	मेसीडोनियन	मलायी	मोलतिज़	नार्वेजियन	फ़ारसी	पोलिश	पुर्तगाली	रोमानियाई
indonezijski	irski	talijanski	japanski	korejski	Lao	latinski	latvijski	litvanski	makedonski	malajski	malteški	Norvežanin	persijski	Polirati	portugalski	Rumunjski
indonesian	Ilandè	Italyen	Japonè	korean	Lao	latin	latvian	lithuanian	macedonian	malay	maltese	norwegian	Persian	polish	Pòtigè	romanian
indonéz	ír	olasz	japán	koreai	lao	latin	lett	litván	macedóniai	maláj	máltai	norvég	perzsa	lengyel	portugál	román
Ինդոնեզերեն	իռլանդական	իտալական	ճապոնացի	Կորեայի	Lao	լատիներեն	Լատվիայի	Լիտվայի	macedonian	malay	maltese	Նորվեգական	պարսիկ	Լեհաստանի	պորտուգալացի	ռումինացի
bahasa Indonesia	Irlandia	Italia	Jepang	Korea	lao	Latin	Latvia	Lithuania	Macedonia	Melayu	Malta	Norwegia	Persia	Polandia	Portugis	Rumania
indonesian	irish	italian	japanese	korean	Lao	Latin	latvian	lithuanian	makedónska	malay	maltese	norwegian	Persian	Pólska	portuguese	romanian
indonesiano	irlandese	italiano	giapponese	coreano	lao	latino	lettone	lituano	macedone	malese	maltese	norvegese	persiano	polacco	portoghese	rumeno
אינדונזי	אירית	איטלקית	יַפָּנִית	קוריאני	לאו	לטינית	לטבי	ליטאי	מקדוני	מלאית	מלטזית	נורבגי	פרסית	לק	פורטוגזית	רומני
インドネシア語	アイリッシュ	イタリア語	日本語	韓国語	ラオ語	ラテン	ラトビア語	リトアニア語	マケドニア語	マレー語	マルタ語	ノルウェー語	ペルシア語	ポーランド語	ポルトガル語	ルーマニア語
ინდონეზიური	irish	იტალიური	იაპონური	კორეული	Lao	ლათინური	ლატვიის	ლიტვის	macedonian	malay	maltese	ქართული	სპარსული	პოლონური	portuguese	romanian
인도네시아 인	아일랜드	이탈리아 사람	일본어	한국어	라오어	라틴어	라트비아 사람	리투아니아 사람	마케도니아 어	말레이 사람	몰티즈	노르웨이 인	페르시아 인	광택	포르투갈 인	루마니아 사람
Indica	Irish	Italian	Italica	Korean	Lao	Latine	Latvian	Lithuanian	Macedonum	Malay	Maltese	Norwegian	Persarum	Polish	Lusitanorum	Romanian
ອິນໂດເນເຊຍ	ໄອແລນ	Italian	ພາສາຍີ່ປຸ່ນ	ພາສາເກົາຫຼີ	ລາວ	ຄໍາລາຕິນ	Latvian	Lithuanian	Macedonian	Malay	Maltese	ນໍເວ	ເປີເຊຍ	Polish	ປອກຕຸຍການ	ໂຣມານີ
indoneziečių	airių	italų	Japonijos	korėjiečių	Lao	lotynų	Latvijos	Lietuvos	Makedonijos	malajų	Maltos	Norvegijos	Persijos	lenkų	portugalų	rumunų
indonēziešu	Īrijas	Itālijas	Japānas	korejiešu	Lao	latīņu	Latvijā	lietuviešu	maķedonietis	malajiešu	maltiešu	norvēģu	persiešu	poļu	portugālis	rumāņu
индонезиски	ирски	италијански	јапонски	корејски	Лао	латински	латвиски	литвански	македонски	малезиски	малтешки	норвешки	персиски	полски	португалски	романскиот
Indonesia	Ireland	Itali	Jepun	Korea	Lao	Latin	Latvia	Lithuania	Macedonia	Melayu	Malta	Norway	persian	Poland	Portugis	Romania
Indonežjan	irish	Taljan	Ġappuniż	korean	Lao	latin	Latvjan	lithuanian	Maċedonjan	Malajan	Malti	Norveġiż	Persian	Pollakka	Portugiż	Rumen
Indonesisch	Iers	Italiaans	Japanse	Koreaans	Laotiaans	Latijns	Lets	Litouws	Macedonisch	Maleis-	Maltees	Noors	Perzisch	Pools	Portugees	Roemeense
indonesisk	Irish	italiensk	japansk	Korean	Lao	Latin	latvisk	litauisk	makedonsk	Malay	maltese	norsk	Persian	Pusse	portugisisk	rumensk
indonezyjski	irlandzki	włoski	japoński	koreański	laotański	łacina	łotewski	litewski	macedoński	malajski	maltański	norweski	perski	polski	portugalski	rumuński
indonésio	irlandês	italiano	japonês	coreano	lao	latino	letão	lituano	macedônio	malaio	maltês	norueguês	persa	polonês	português	romeno
Indoneziană	irlandez	italian	japonez	coreean	Lao	latin	letonă	lituanian	macedonean	malaezian	maltez	norvegian	persană	polonez	portugheză	Română
индонезийский	ирландский	итальянский	японский	корейский	лаосский	латинский	латышский	литовский	македонский	малайский	мальтийский	норвежский	персидский	польский	португальский	румынский
indonézsky	írsky	taliansky	japonský	kórejský	lao	Latina	lotyšský	litovský	macedónsky	malajský	maltčina	nórsky	perzský	Poľský	portugalčina	rumunčina
indonezijščina	Irski	italijanščina	japonski	korejščina	Lao	latinščina	latvijščina	litovščina	Makedonski	malajščina	malteščina	Norveški	perzijščina	poljščina	portugalščina	romunščina
indonezian	irlandez	italian	japonez	Korean	Lao	Latine	letonisht	lituanez	maqedonas	malajas	maltez	norvegjez	persisht	polonisht	portugalisht	rumun
индонезијски	ирски	италијански	јапански	корејски	Лао	латински	летонски	Литвански	македонски	малајски	малтешки	норвешки	персијски	пољски	португалски	румунски
indonesisk	irländsk	italienska	japansk	korean	lao	latin	lettisk	litauisk	makedonska	Malay	maltesisk	norsk	perser	polska	portugisiska	rumänska
Indonesia	Ireland	Italia	Japan	Korea	Lao	Amerika ya	Kilatvia	lithuanian	macedonian	malay	maltese	Norway	Kiajemi	polish	Ureno	Kirumi
இந்தோனேசிய	ஐரிஷ்	இத்தாலிய	ஜப்பனீஸ்	கொரிய	லாவோ	லத்தீன்	லேட்வியன்	லிதுவேனியன்	மாஸிடோனியன்	மலாய்	மால்டிஸ்	நோர்வே	பாரசீக	போலிஷ்	போர்த்துகீசியம்	ரோமானியன்
ఇండోనేషియన్	ఐరిష్	ఇటాలియన్	జపనీస్	కొరియన్	Lao	లాటిన్	Latvian	లిథువేనియన్	Macedonian	Malay	మాల్టీస్	నార్వేజియన్	పర్షియన్	పోలిష్	పోర్చుగీస్	romanian
ชาวอินโดนีเซีย	ชาวไอริช	อิตาลี	ญี่ปุ่น	เกาหลี	ลาว	ละติน	ลัตเวีย	ลิทัวเนีย	มาซิโดเนีย	ภาษามลายู	มอลตา	นอร์เวย์	เปอร์เซีย	ขัด	โปรตุเกส	โรมาเนีย
Indonesiyo	Irlandes	Italyano	Hapon	Koreano	Lao	Latin	latvian	Lithuanian	Masidoniyan	Malay	Maltis	Norwegian	Persyano	Poland	Portuges	Rumano
Endonezce	İrlanda Dili	İtalyanca	Japonca	Korece	Lao Dili	Latince	Letonca	Litvanca	Makedonca	Malay Dili	Malta Dili	Norveççe	Farsça	Lehçe	Portekizce	Romence
індонезійська	ірландська	італійська	японська	корейська	лаоська	латинська	латвійська	литовська	македонська	малайська	мальтійська	норвезька	перська	польська	португальська	румунська
انڈونیشیا	آئرش	اطالوی	جاپانی	کوریائی	لاؤشین	لاطینی	لیٹوین	لتھوانین	مقدونیائی	مالائی	مالٹی	ناروے	فارسی	پولستانی	پرتگالی	رومنی
Indonesia	Ireland	người Ý	người Nhật B	Hàn Quốc	Lào	Latin	Latvia	người Lithuania	Macedonia	Malay	maltese	Na Uy	Ba Tư	đánh bóng	Bồ Đào Nha	Rumani
אינדאָנעזיש	איריש	איטאַליעניש	יאַפּאַניש	קאָרעיִש	לאַאָ	רעדאַגירן	לעטיש	ליטוויש	מאַקעדאָניש	אַראַביש	מאַלטעזיש	נאָרוועגיש	פּערסיש	פּויליש	פּאָרטוגעזיש	רומעניש
印度尼西亚语	爱尔兰语	意大利语	日语	韩语	老挝语	拉丁语	拉脱维亚语	立陶宛语	马其顿语	马来语	马耳他语	挪威语	波斯语	波兰语	葡萄牙语	罗马尼亚语
印度尼西亞語	愛爾蘭語	意大利語	日語	韓語	老撾語	拉丁語	拉脫維亞語	立陶宛語	馬其頓語	馬來語	馬耳他語	挪威語	波斯語	波蘭語	葡萄牙語	羅馬尼亞語

ru	sr	sk	sl	es	sw	sv	ta	te	th	tr	uk	ur	vi	cy	yi
Russiese	serbian	Slowaakse	slovenian	Spaans	swahili	Sweedse	Tamil	Telugu	Thai	turkish	Oekraïens	Urdu	vietnamese	welsh	yiddish
روسية	صربية	سلوفاكية	سلوفينية	أسبانية	سواحلية	سويدية	تاميلية	تيلوغوية	تايلاندية	تركية	أوكرانية	أردية	فيتنامية	ويلزية	يديشية
rus	serb	slovak	slovenian	ispan	swahili	isveç	Tamil	Telugu	thai	türk	Ukrayna	Urdu	vietnamese	welsh	yiddish
руская	сербская	славацкая	славенскі	іспанскі	суахілі	шведскі	Tamil	Telugu	тайская	турэцкі	ўкраінскі	урду	в'етнамская	Валійская	ідыш
руски	сръбски	словашки	словенски	испански	суахили	шведски	тамилски	телугу	тайский	турски	украински	урду	виетнамски	уелски	идиш
রাশিয়ান	সার্বিয়ান	স্লোভাক	স্লোভেনিয়ান	স্প্যানিশ	সোয়াহিলি	সুইডেনের	Tamil	Telugu	থাই	তুর্কী	ইউক্রেনীয়	উর্দু	ভিয়েতনামী	ওয়েলশ	য়িদ্দিশ
rus	serbi	eslovac	eslovè	espanyol	suahili	suec	tàmil	telugu	tailandès	turc	ucraïnès	urdú	vietnamita	gal·lès	jiddisch
ruština	srbština	Slovák	slovinský	španělština	svahilština	švédský	Tamil	Telugu	Thai	turečtina	ukrajinština	Urdu	vietnamština	velština	jidiš
Rwsia	serbian	Slofaceg	slovenian	Sbaeneg	swahili	Swedeg	Tamil	Telugu	thai	turkish	Wcreineg	Urdu	Fietnameg	Cymraeg	Iddeweg
russisk	serbisk	slovakisk	slovensk	spansk	swahili	svensk	tamil	telugu	thai	tyrkisk	ukrainsk	urdu	vietnamesisk	walisisk	jiddisch
Russisch	Serbisch	Slowakisch	Slowenisch	Spanisch	Swahili	Schwedisch	Tamil	Telugu	Thailändisch	Türkisch	Ukrainisch	Urdu	Vietnamesisch	Walisisch	Jiddisch
Ρωσικά	Σέρβικα	Σλοβάκικα	Σλοβένικα	Ισπανικά	Σουαχίλι	Σουηδικά	Ταμίλ	Τελούγκου	Ταϊλανδικά	Τούρκικα	Ουκρανικά	Ουρντού	Βιετναμέζικα	Ουαλικά	Γερμανοεβραϊκή διάλεκτος
Russian	Serbian	Slovak	Slovenian	Spanish	Swahili	Swedish	Tamil	Telugu	Thai	Turkish	Ukrainian	Urdu	Vietnamese	Welsh	Yiddish
russian	Serba	Slovaka	esloveno	hispana	swahili	Sveda	Tamil	Telugu	Taja	Turka	Ukraina	Urdu	Vjetnama	kimra	jida
ruso	serbio	eslovaco	esloveno	español	swahili	sueco	Tamil	Telugu	tailandés	turco	ucraniano	urdu	vietnamita	galés	yídish
vene	serbia	slovaki	sloveeni	hispaania	suahiili	rootsi	Tamil	Telugu	tai	türgi	ukraina	urdu keel	vietnamese	Walesi	jidiši
russian	serbian	Eslovakiako	Esloveniako	Espainiako	swahili	Suediako	Tamil	Telugu	thai	turkish	ukrainian	urdu	vietnamese	welsh	Yiddish
روسی	صرب	اسلواکی	اسلوونیایی	اسپانیایی	سواحیلی	سوئد	Tamil	Telugu	تایلندی	ترکی	اوکراین	زبان اردو	ویتنامی	کلاه گذاشتن	ییدیش
Venäjän kieli	serbialainen	Slovakian	slovenian	espanja	Suahili	ruotsi	Tamil	Telugu	thaimaalainen	turkki	ukrainalainen	Urdu	vietnam	Walesin	jiddiš
russe	serbe	slovaque	slovène	espagnol	swahili	suédois	tamil	telugu	thaïlandais	turc	ukrainien	urdu	vietnamien	gallois	yiddish
Rúisis	Seirbis	Slóvaicis	Slóivéinis	Spáinnis	Svahaílis	Sualainnis	Tamil	Telugu	Téalainnis	Tuircis	Úcráinis	Urdais	Vítneamais	Breatnais	Giúdais
ruso	serbio	eslovaco	esloveno	español	swahili	sueco	tamil	telugu	thai	turco	ucraíno	urdú	vietnamita	galés	yiddish
रूसी	सर्बियाई	स्लोवाक	स्लोवेनियाई	स्पेनिश	स्वाहिली	स्वीडिश	Tamil	Telugu	थाई	तुर्की	यूक्रेनी	उर्दू	वियतनामी	वेल्श	यहूदी
ruski	srpski	slovački	slovenska	španjolski	svahili	švedski	Tamil	Telugu	tajlandska	turski	ukrajinski	urdu	vijetnamski	velški	jidiš
Ris	serbian	slovak	slovenian	Panyòl	swahili	swedish	Tamil	Telugu	thai	turkish	Ukrainian	Urdu	vietnamese	welsh	Yiddish
orosz	szerb	szlovák	szlovén	spanyol	szuahéli	svéd	tamil	telugu	thai	török	ukrán	urdu	vietnami	walesi	jiddis
ռուսական	սերբ	Սլովակիայի	Սլովենիայի	իսպաներեն	swahili	շվեդական	Tamil	Telugu	թայերեն	թուրքական	ուկրաինական	ուրդու	վիետնամերեն	ուելսերեն	Yiddish
Rusia	Serbia	Slowakia	Slovenia	Spanyol	Swahili	Swedia	Tamil	Telugu	Thai	Turki	Ukraina	Urdu	Vietnam	Welsh	Yiddi
rússneska, Rússi, rússnesku	serbian	slovak	slovenian	spænska, Spánverji, spænsku	swahili	swedish	Tamil	Telugu	thai	turkish	ukrainian	Urdu	vietnamese	welsh	Yiddish
russo	serbo	slovacco	sloveno	spagnolo	swahili	svedese	tamil	telugu	thai	turco	ucraino	urdu	vietnamita	gallese	yiddish
רוסי	סרבי	סלובקי	הסלובני	ספרדית	סוואהילית	שוודי	Tamil	Telugu	תאילנדי	טורקית	אוקראיני	אורדו	וייטנאמי	וולשית	אידיש
ロシア語	セルビア語	スロバキア語	スロベニア語	スペイン	スワヒリ語	スウェーデン語	Tamil	Telugu	タイ	トルコ語	ウクライナ語	ウルドゥー語	ベトナム語	ウェールズ語	イディッシュ語
რუსული	ქართული	slovak	slovenian	ესპანური	swahili	შვედეთის	Tamil	Telugu	thai	თურქული	უკრაინული	Urdu	ვიეტნამური	welsh	იდიში
러시아인	세르비아 사람	슬로바키아 사람	슬로베니아	스페인 사람	스와힐리어	스웨덴어	Tamil	Telugu	타이어	터키의	우크라이나 말	우르두어	베트남 사람	웨일스 말	이디시 말의
Russian	Serbian	Sinensi	Sinensi	Spanish	Swahili	Swedish	Tamil	Telugu	Thai	Turca	Ukrainian	Urdu	Vietnamese	Welsh	Yiddish
ລັດເຊຍ	Serbian	Slovak	Slovenian	ແອສປາໂຍນ	Swahili	ຊູແອັດ	Tamil	Telugu	ໄທ	ຕວກກີ	ຢູແກຣນ	Urdu	ຫວຽດນາມ	ພາສາ	ຢິດດິສ
Rusijos	serbų	Slovakijos	slovėnų	ispanų	svahili	švedų	Tamil	Telugu	tajų	turkų	ukrainiečių	Urdų kalba	vietnamiečių	Velso	jidiš
krievu	serbu	slovaku	slovēņu	spāņu	svahili	zviedru	Tamil	Telugu	Thai	turku	ukraiņu	urdu	vjetnamiešu	velsiešu	Jidiša
рускиот	српскиот	словачки	словенечкиот	шпански	свахили	шведски	Tamil	Telugu	тајландски	турските	украински	урду	виетнамски	велшки	јидски
Rusia	Serbia	Slovak	Slovenia	Sepanyol	Swahili	Sweden	Tamil	Telugu	Thai	Turki	Ukraine	Urdu	Vietnam	Wales	Yiddish
Russu	Serb	Slovakka	Sloven	Spanjol	Swaħili	Svediż	Tamil	Telugu	Tajlandiż	Tork	Ukraina	Urdu	Vjetnamiż	welsh	Jiddix
Russisch	Servisch	Slowaaks	Sloveens	Spaans	Swahili	Zweeds	Tamil	Telugu	Thais	Turks	Oekraïens	Urdu	Vietnamees	Welsh	Jiddisch
Russian	serbisk	slovak	slovensk	spansk	swahili	Swedish	Tamil	Telugu	Thai	Turkish	ukrainsk	urdu	Vietnamesisk	welsh	yiddish
rosyjski	serbski	słowacki	słoweński	hiszpański	suahili	szwedzki	tamilski	telugu	tajski	turecki	ukraiński	urdu	wietnamski	walijski	jidysz
russo	sérvio	eslovaco	esloveno	espanhol	suaíli	sueco	tâmil	telugo	tailandês	turco	ucraniano	urdu	vietnamita	galês	ídiche
rus	sârb	slovacă	slovenă	spaniolă	swahili	suedez	Tamil	Telugu	tailandez	turc	ucrainean	Urdu	Vietnameză	velșă	idiș
русский	сербский	словацкий	словенский	испанский	суахили	шведский	тамильский	телугу	тайский	турецкий	украинский	урду	вьетнамский	валлийский	идиш
Ruský	Srbský	slovenský	slovinčina	španielsky	swahilčina	Švédsky	Tamil	Telugu	thai	turečtina	ukrajinský	urdu	vietnamský	waleský	jidiš
ruščina	srbščina	slovaščina	slovenščina	španščina	svahili	švedščina	Tamil	Telugu	tajski	turščina	ukrajinščina	urdujščina	vietnamščina	valižanščina	jidiš
rusisht	serb	sllovak	slloven	spanjisht	Shqip	suedez	Tamil	Telugu	thai	turk	ukrainas	Urdu	vietnamisht	Shqip	jidish
руски	Srpski	словачки	Словеначки	шпански	Свахили	шведски	Тамил	Телугу	Тајландски	турски	украјински	урду	вијетнамски	Велшки	јидиш
ryska	serb	slovakiska	slovenska	spansk	swahili	svenska	Tamil	Telugu	Thai	turkiska	ukrainare	Urdu	vietnames	walesisk	jiddisch
Urusi	serbian	slovak	slovenian	Hispania	Kiswahili	Sweden	Tamil	Telugu	thai	Kituruki	Kiukreni	Kiurdu	vietnamese	welsh	Yiddish
ரஷியன்	செர்பியன்	ஸ்லோவாக்	ஸ்லோவேனியன்	ஸ்பானிஷ்	swahili,	ஸ்வீடிஷ்	Tamil	Telugu	தாய்	துருக்கிய	உக்ரைனியன்	உருது	வியட்நாம்	வெல்ஷ்	இத்திஷ் Albanian,
రష్యన్	సెర్బియన్	స్లోవాక్	స్లోవేనియన్	స్పానిష్	స్వాహిలి	స్వీడిష్	Tamil	Telugu	థాయ్	టర్కిష్	ఉక్రేనియన్	ఉర్దూ	వియత్నామీస్	వెల్ష్	Yiddish
รัสเซีย	เซอร์เบีย	สโลวาเกีย	ภาษาสโลเวเนีย	สเปน	ภาษาสวาฮิลี	สวีเดน	Tamil	Telugu	ภาษาไทย	ตุรกี	ยูเครน	ภาษาอูรดู	เวียดนาม	เวลส์	ยิดดิช
Ruso	Serbyan	Eslobako	Eslobenyan	Espanyol	Swahili	Suweko	Tamil	Telugu	Thai	Turko	Ukranyo	Urdu	Vietnamese	welsh	Yidish
Rusça	Sırpça	Slovakça	Slovence	İspanyolca	Swahili Dili	İsveççe	Tamil Dili	Telugu Dili	Taylandca	Türkçe	Ukraynaca	Urduca	Vietnamca	Galce	Eskenazi Dili
російська	сербська	словацька	словенська	іспанська	суахілі	шведська	тамільська	телугу	тайська	турецька	українська	урду	в'єтнамська	валлійська	ідиш
روسی	صربی	سلاواکی	سویڈش	ہسپانوی	سواہلی	سویڈش	Tamil	Telugu	تھائی	ترکی	یوکرائن	اردو	ویتنامی	ویلش	یدش
người Nga	Serbia	Slovak	Slovenia	người Tây Ban Nha	swahili	Thụy Điển	Tamil	Telugu	Thái Lan	Thổ Nhĩ Kỳ	Ukraina	Urdu	Tiếng Việt	welsh	Yiddish
רוסיש	סערביש	סלאָוואַקיש	בולגאַריש	שפּאַניש	סוואַהילי	שוועדיש	טאַמיל	טעלוגו	Thai	טערקיש	אוקריייניש	אורדו	וויעטנאַמעזיש	וועלש	ייִדיש
俄语	塞尔维亚语	斯洛伐克语	斯洛文尼亚语	西班牙语	斯瓦希里语	瑞典语	泰米尔语	泰卢固语	泰语	土耳其语	乌克兰语	乌尔都语	越南语	威尔士语	意第绪语
俄語	塞爾維亞語	斯洛伐克語	斯洛文尼亞語	西班牙語	斯瓦希里語	瑞典語	泰米爾語	泰盧固語	泰語	土耳其語	烏克蘭語	烏爾都語	越南語	威爾士語	意第緒語

ENGLISH	dictionary	glossary	lexicon	vocabulary	terminology
af	woordeboek	woordelys	leksikon	woordeskat	terminologie
ar	قاموس	معجم	معجم	مفردات	مصطلحات
az	lüğət	glossary	lexicon	lüğət	terminologiya
be	слоўнік	гласарый	лексіка	лексіка	тэрміналогія
bg	речник	речник	лексика	лексика	терминология
bn	অভিধান	শব্দকোষ	শব্দকোষ	শব্দভান্ডার	পরিভাষা
ca	diccionari	glossari	lèxic	vocabulari	terminologia
cs	slovník	glosář	slovník	slovník	terminologie
cy	geiriadur	geirfa	geirfa	geirfa	termau
da	ordbog	ordliste	leksikon	ordforråd	terminologi
de	ლექსიკონი	ტერმინების	lexicon	ლექსიკა	ტერმინოლოგია
el	λεξικό	γλωσσάρι	λεξικό	το λεξιλόγιο	την ορολογία
en	dictionary	glossary	lexicon	vocabulary	terminology
eo	vortaro	glosaro	leksikon	vortprovizo	terminologio
es	diccionario	glosario	léxico	vocabulario	terminología
et	sõnastik	sõnastik	leksikon	sõnavara	terminite
eu	hiztegia	glosario bat	hiztegia	hiztegi	terminologia
fa	فرهنگ لغت	واژه نامه	واژه نامه	فرهنگ لغت	اصطلاحات
fi	sanakirja	sanasto	sanasto	sanasto	terminologiaa
fr	dictionnaire	glossaire	lexique	vocabulaire	terminologie
ga	Foclóir	gluais	lexicon	stór focal	téarmaíocht
gl	dicionario	glosario	léxico	vocabulario	terminoloxía
hi	शब्दकोश	शब्दावली	शब्दकोश	शब्दावली	शब्दावली
hr	rječnik	pojmovnik	leksikon	rječnik	terminologije
ht	diksyonè	glosè	leksik	vokabilè	tèminoloji
hu	szótár	szószedet	lexikon	szótár	terminológia
hy	բառարան	բառարան	բառապաշար	բառապաշար	տերմինաբանություն
id	kamus	glosarium	leksikon	kosakata	istilah
is	orðabók	orðasafn	Lexicon	orðaforða	hugtök
it	dizionario	glossario	lessico	vocabolario	terminologia
iw	מילון	מילון מונחים	לקסיקון	אוצר מילים	טרמינולוגיה
ja	辞書	用語集	語彙	語彙	用語
ka	Wörterbuch	Glossar	Lexikon	Wortschatz	Terminologie
ko	사전	용어	사전	어휘	용어
la	dictionary	glossario	Lexicon	vocabulorum	terminologia
lo	ຈະນານຸກົມ	ສັບ	ຄໍາສັບ ຄໍາສັບສາານ ຫະນາຄານ ໄລຍະຍາວ		ຄໍາສັບ
lt	žodynas	žodynėlis	Žodynas	žodynas	terminologija
lv	vārdnīca	glosārijs	leksika	vārdu krājums	terminoloģija
mk	речникот	речник	лексикон	вокабулар	терминологија
ms	kamus	glosari	kosa kata	perbendaharaan kata	istilah
mt	dizzjunarju	glossarju	lessiku	vokabolarju	terminoloġija
nl	woordenboek	verklarende woordenlijst	lexicon	woordenschat	terminologie
no	ordbok	ordliste	leksikon	vokabular	terminologi
pl	słownik	słownik	słownictwo	słownictwo	terminologia
pt	dicionário	glossário	léxico	vocabulário	terminologia
ro	Dicţionar	glosar	lexicon	vocabular	terminologie
ru	словарь	глоссарий	лексика	лексика	терминология
sk	slovník	glosár	slovník	slovník	terminológia
sl	slovar	glosar	leksikon	besednjak	terminologija
sq	fjalor	fjalorth	leksikun	fjalori	terminologjinë
sr	речник	речник	лексикон	лексика	терминологија
sv	ordbok	ordlista	lexikon	ordförråd	terminologi
sw	kamusi	glossary	Lexicon	msamiati	maneno
ta	அகராதி	அருஞ்சொற்பொருள் இதழ்		சொல்லகராதி	சொல்
te	నిఘంటువు	పదకోశం	కోశం	పదజాలం	పరిభాష
th	พจนานุกรม	คำศัพท์	คำ	ศัพท์	ศัพท์แสง
tl	diksyonaryo	glossary	leksikon	bokabularyo	terminolohiya
tr	sözlük	sözlük	sözlük	kelime	terminoloji
uk	словник	глосарій	лексика	лексика	термінологія
ur	ڈکشنری	ایوان کی لغت	ڈکشنری	ذخیرہ الفاظ	اصطلاحات
vi	từ điển	chú giải	từ vựng	từ vựng	thuật ngữ
yi	וואָרטערבוך	גלאָסאַר	לעקסיקאָן	וואָקאַבולאַרי	טערמינאָלאָגיע
zh-CN	术语词典	词库	词汇	短期银行	术语库

thesaurus	jargon	word list	term base	term bank	word bank
tesourus	jargon	woordelys	termyn basis	termyn bank	woord bank
مكنز	مصطلحات	قائمة الكلمات	قاعدة المدى	بنك المدى	بنك الكلمة
thesaurus	jargon	söz siyahısı	müddətli bazası	müddətli bank	söz bank
тэзаўрус	жаргон	спіс слоў	тэрмін база	тэрмін банк	слова банк
синонимен речник	жаргон	списък от думи	терминологична база	терминът банка	думата банка
জ্ঞানভাণ্ডার	অপভাষা	শব্দ তালিকা	শব্দটি বেস	মেয়াদী ব্যাংক	শব্দ ব্যাংক
diccionari de sinònims	argot	llista de paraules	base de terme	banc termini	banc de paraules
tezaurus	žargon	seznam slov	termín základna	termín banka	Světové banky
thesawrws	jargon	rhestr geiriau	sylfaen tymor	banc tymor	banc geiriau
synonymordbog	jargon	ordliste	termbase	term bank	ord bank
თეზაურუსი	ჟარგონი	სიტყვა სია	ტერმინი ბაზა	ტერმინი ბანკის	სიტყვა ბანკი
του θησαυρού	ορολογία	λίστα λέξεων	βάση όρων lexikó	βραχυπρόθεσμες τραπεζικές	τράπεζα λέξη
thesaurus	jargon	word list	term base	term bank	word bank
tezaŭro	jargon	vortlisto	termino bazo	termino banko	vorto banko
diccionario de sinónimos	jerga	lista de palabras	base de términos	banco de términos	banco de palabras
tesaurus	kõnepruugis	sõnade	terminibaasina	Pangalaenude	sõna pank
thesaurus	jargon	hitz zerrenda	epe base	epe banku	hitza banku
اصطلاحنامه	اصطلاحات	لیست کلمه	پایه مدت	بانک مدت	بانک کلمه
sanasto	slangia	sana luettelo	termi pohja	termi pankki	sana pankki
thésaurus	le jargon	liste de mots	base de termes	bancaire à terme	banque de mots
teasárais	béarlagair	liosta focal	bonn téarma	téarma bainc	banc focal
enciclopedia	argot	lista de palabras	base prazo	banco prazo	base de palabras
कोश	शब्दजाल	शब्द सूची	अवधि आधार	अवधि बैंक	शब्द बैंक
tezaurus	žargon	popis riječi	pojam baze	izraz banka	riječ je banka
sinonim	jagon	lis mo	tèm baz	tèm labank	bank mo
szinonimaszótár	zsargon	szó listát	terminológiai adatbázisa	lejáratú banki	szószedetet
թեզաուրուս	ժարգոն	բառը ցուցակը	ժամկետը բազան	ժամկետը բանկը	Բառը բանկային
tesaurus	jargon	daftar kata	basis jangka	bank jangka	Bank kata
samheitaorðabók	hrognamál	orðalista	grunnur	tíma banka	orðið banki
thesaurus	gergo	elenco di parole	termine base	banca termini	lista di termini
אגרון	ז'רגון	רשימת מילות	בסיס טווח	בנק טווח	מילת בנק
シソーラス	専門用語	単語リスト	用語ベース	用語の銀行	単語銀行
Thesaurus	Jargon	Wortliste	Terminologiedatenbank	tigen Bank	Wort Bank
동의어 사전	전문 용어	단어 목록	용어 의 기초	용어 은행	단어 은행
thesaurus	turpiloquio	verbum codex	term base	term ripam	verbum ripam
thesaurus	ຄຳສັບສະເພາະ	ບັນຊີລາຍການ ຂອງຄຳສັບ	ພື້ນຖານ ໃນໄລຍະ		ທະນາຄານ ຄຳ
tezauras	žargonas	žodis sąraše	terminų bazė	terminų bankas	Pasaulio banko
tēzauru	žargons	vārdu sarakstu	terminu bāze	termins banka	vārds banka
речник	жаргон	листа на зборови	терминот базен	терминот банка	зборот банка
tesaurus	jargon	senarai perkataan	asas jangka	bank jangka	bank perkataan
teżawru	jargon	lista kelma	bażi terminu	bank terminu	bank kelma
thesaurus	jargon	woordenlijst	termijn basis	woord bank	woord bank
synonymordbok	sjargong	ordliste	sikt base	term bank	ordet bank
tezaurus	żargon	lista słów	baza termin	banku termin	Bank słowo
enciclopédia	jargão	lista de palavras	base prazo	banco prazo	banco de palavras
tezaur	jargon	lista de cuvinte	de bază pe termen	bancare pe termen	banca cuvânt
тезаурус	жаргон	список слов	термин база	срок банк	слово банк
tezaurus	žargón	zoznam slov	termín základňa	termín banka	Svetovej banky
besednjak	žargon	seznam besed	izraz baza	izraz banka	beseda banka
enciklopedi	zhargon	lista fjalë	baza afat	banka termi	banka fjalë
тезаурус	жаргон	Ворд Лист	појам база	термин банка	реч банка
synonymordbok	jargong	ordlista	termen bas	termbank	ord bank
Thesaurus	jargon	orodha neno	neno msingi	mrefu benki	neno benki
களஞ்சியத்தை	வாசகங்கள்	வார்த்தை பட்டிய	கால அடிப்படை	கால வங்கி	வார்த்தை வங்கியில்
థెసారస్	అయోమయం	పదజాలం	పదం బేస్	కాలిక బ్యాంకు	పదం బ్యాంకు
ธนาคาร	ระยะ	พจนานุกรม	รายการคำ	คำศัพท์	ธนาคาร
thesaurus	magulong pag-uusap	listahan ng salita	term base	term bank	bangko ng salita
hazine	jargon	kelime listesi	terımın kökeni	terım bankası	kelime bankası
тезаурус	жаргон	список слів	термін база	термін банк	слово банк
قاموس	شبدجال	لفظ کی فہرست	مدت کی بنیاد	اصطلاح بینک	لفظ بینک
từ điển đồng nghĩa	thuật ngữ	danh từ	cơ sở hạn	hạn ngân hàng	ngân hàng từ
טאָסאַראַס	זשאַרגאָן	וואָרט רשימה	טערמין באַזע	טערמין באַנק	וואָרט באַנק
行话	单词列表	术语		词库	词库

LANGUAGE NAME (EN)	CODE
Afrikaans	af
Albanian	sq
Arabic	ar
Armenian	hy
Azerbaijani	az
Basque	eu
Belarusian	be
Bengali	bn
Bulgarian	bg
Catalan	ca
Chinese	zh-CN
Croatian	hr
Czech	cs
Danish	da
Dutch	nl
English	en
Esperanto	eo
Estonian	et
Filipino	tl
Finnish	fi
French	fr
Galician	gl
German	de
Georgian	ka
Greek	el
Haitian Creole	ht
Hebrew	iw
Hindi	hi
Hungarian	hu
Icelandic	is
Indonesian	id
Irish	ga
Italian	it
Japanese	ja
Korean	ko
Lao	lo
Latin	la
Latvian	lv
Lithuanian	lt
Macedonian	mk
Malay	ms
Maltese	mt
Norwegian	no
Persian	fa
Polish	pl
Portuguese	pt
Romanian	ro
Russian	ru
Serbian	sr
Slovak	sk
Slovenian	sl
Spanish	es
Swahili	sw
Swedish	sv
Tamil	ta
Telugu	te
Thai	th
Turkish	tr
Ukrainian	uk
Urdu	ur
Vietnamese	vi
Welsh	cy
Yiddish	yi

The report is fully written and edited by Daniil Gannota.